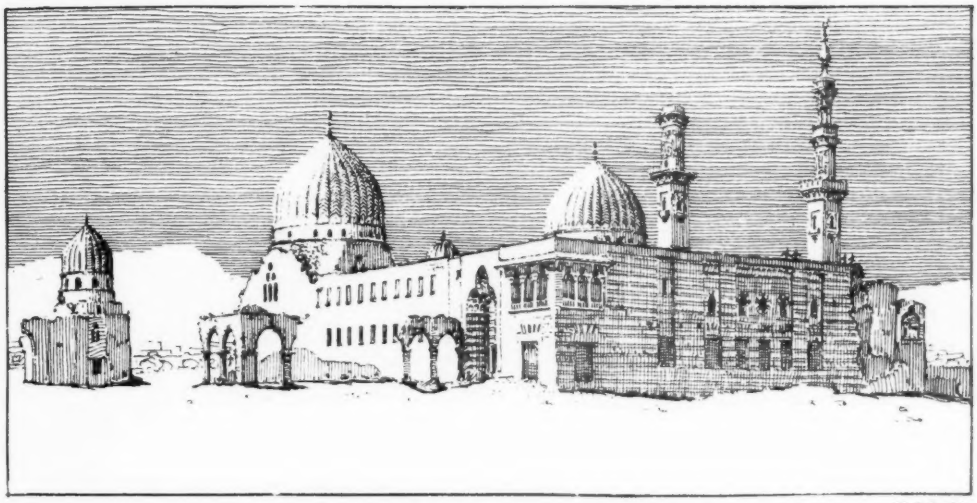


CAIRO: MOSQUE OF SULTAN BARQUQ, *extra muros* (1400-10). *M.S.B. del.*

(From the same author's *Through Egypt in War-time* By permission of Messrs. Fisher Unwin, Ltd.)

SARACENIC ARCHITECTURE IN EGYPT AND PALESTINE.

By MARTIN S. BRIGGS [*F.*],

Author of *In the Heel of Italy, Baroque Architecture, Through Egypt in War-time,* and *Continuation-School Buildings in Germany.*

Read before the Royal Institute of British Architects, Monday, 13th December 1920.

IT is a long time since a Paper on Saracenic architecture, under that or any other name, was read at this Institute, and a word of justification for the choice of such a subject may be thought necessary. I have ventured to treat of an historical style which many of you will consider unfashionable, and which all of you will regard as useless, for two good reasons: first, because Britain has recently been very intimately concerned with the countries where the chief school of Saracenic art had its home; and, secondly, because during the past few years hundreds of thousands of untravelled Englishmen have seen a mosque for the first time in their lives. The unexpected honour of the presence this evening of our distinguished guest, the Emir Faisal, lends local colour to my subject, and to those of you who saw snow—as I did yesterday—for the first time for five years, it may be pleasant to think for an hour of the brilliant sunshine and the warmth of the East. I do not pretend that I can advance any startling and therefore attractive new theory of the origin and nature of Muslim art. Nor is there in this Paper any attempt, direct or indirect, to add another to the miserable series of "revivals" that have strangled the development of our national architecture for so long.

My Paper is no more than a simple study of an exotic style unfitted in every way for adoption in our country and in our century, but it is topical in the sense that the subject has perforce been in the minds of many of us during the War. Saracenic architecture was a product of the Muslim faith, in a semi-tropical climate, during the Middle Ages. It must, therefore, be judged only under these conditions, not in regard to its suitability for Christian worship, for northern latitudes, or for modern habits of life. It must be seen through Oriental eyes. But even to the student of Gothic architecture in Europe it has some importance, for the origin of some of the forms that are most familiar to us in our ancient buildings—notably the pointed arch—is attributed to the Arabs, and during the close intercourse between Crusaders and Saracens in the XIIth century many architectural features changed hands. Lastly, it must not be forgotten that in the early part of the VIIIth century the great victorious army of the Saracens reached a point in France 200 miles from the shores of England, and that only the Battle

of Tours prevented this country and all Northern Europe from coming under the sway of a power that stretched from China to Morocco.

Many of you will remember listening to a Paper, read here a few years ago, by the late Mr. March-Phillipps, a very able lay-critic of architecture, with whom certain distinguished members of this Institute have had many a passage-at-arms. His delightful book of essays—*The Works of Man*—on various architectural periods, contains one chapter entitled " The Arab in Architecture." Now Mr. March-Phillipps is one of the very few writers on our art whose books do not depend chiefly on their illustrations. (Mr. Geoffrey Scott's brilliant work—*The Architecture of Humanism*—is another example, and many of Ruskin's architectural essays are readable on their literary merits alone.) But without in any way depreciating the splendid plates that form the most valuable part of modern architectural books, I wish to draw your attention to the illustrations in this book, *The Works of Man*. The first edition contained only a very appropriate frontispiece. But in a later edition the author was persuaded or bullied by his publisher, or induced by an error of judgment on his own part, to add a score or so of pictures, and for his Arab chapter he selected three subjects illustrating the worst features of the style, especially one view of arcading in the Great Mosque of Cordova. This is one of the most extravagant examples of Moorish design extant, hardly paralleled except possibly in India, yet round this plate he weaves so hostile a criticism of Arab art that even the charm of his writing cannot force every reader to accept it without protest. A similar treatment of Baroque would give us Borromini as its chief exponent, neglecting all the dignity and grandeur it possessed in more restrained hands. And just because I have generally found this writer so stimulating in his criticisms of other architectural periods, though I disagree with him very decidedly here, I venture to quote his opinion of Arab art as a text for my Paper to-night.

" Arab architecture," he writes, " is the best presentment of Arab character that remains to us. No historical evidence can furnish forth to the understanding a likeness of the man so expressive as this architecture offers to the eye. Yet its significance is apt to be overlooked, and overlooked usually for the same reason. Between almost all the books dealing wholly or in part with Arab and Moorish art which have passed through my hands during the last year there exists, under all differences of treatment and style, one fundamental resemblance. They almost all regard Arab architecture from the same—namely, from the romantic—standpoint. They almost all, that is to say, treat it not as a subject possessing a definite meaning, and capable of rational explanation, but as an opportunity for exercising those sentimental and poetic feelings in which it is always so pleasant to indulge. Its fascinating associations, its strange and unfamiliar aspect, its forlornness and desolation, its gardens, nightingales, and orange-blossoms, incite us perpetually to poetry and tears. . . .

" This is the temper, romantic rather than rational, in which the examination of Arab architecture is usually conducted, and what I wish to point out is that, however effective the result may be from the literary point of view, such a treatment ignores altogether one very powerful source of interest which Arab architecture possesses ; the interest, I mean, which belongs to it as an interpretation, quite literal, exact, and reliable, of Arab character. In its eager inventiveness, in the capricious changes, complications, and inflections of its designs, in its impulsive energy, and, above all, in its inherent weakness and instability, there is depicted in this style, if we would but coolly and rationally examine it, a visible representation of the Arab as we know him in history, or as he is to be met with to-day in the flesh in those deserts to which the progress of more stable races has once again relegated him. The stamp and impress taken of him by these eccentric arches and purposeless entanglements of tracery are the stamp and impress which he gave to all his undertakings. His impetuous yet ill-sustained campaigns have this character ; his so-called civilisation, so imposing yet so fugitive, has it ; all his scientific and intellectual achievements, informed with vague visions and transcendental guesses, have it ; above all, the man himself, full of fiery, short-lived and contradictory impulses, is the incarnation of it."

Mr. March-Phillipps is unfortunately dead, so that he can no longer defend his theories against the lumbering criticism of architects with the courtesy and wit that he always brought to these encounters. I hope, therefore, that those of you—and there must be many—who know his work will agree that my summary of his argument is fair and just, for that is the least we owe to his memory.

After the passage that I have just quoted in full, he proceeds to analyse the character of the Arabs, as he reads it in the record of their sensational military conquests during the early centuries of their history, and finally condemns it as a combination of frantic energy and fickleness, of weakness and instability. The victories of the Saracens he regards as showy and barren of result. But, without venturing far into the region of controversial history, there is surely much that he leaves unsaid in this presentation of his case. He says nothing of the enormous driving force of Islam, the great religion that is still one of the most potent factors in the world to-day. I have just read this sentence in a book by a Christian missionary who has spent his life in working among Muhammadans in Northern Africa: "When Islam once takes hold, it becomes almost impossible, humanly speaking, to dislodge it."

And in Africa, at any rate, Islam is gaining converts far more rapidly than Christianity. Does Mr. March-Phillipps imply that Islam is weak, or fickle, or unstable—after thirteen centuries? Yet it was the power of Islam, rather than anything in the Arab temperament, that brought Saracenic architecture into being.

He speaks of the Arab invasion of Europe as a whirlwind from the desert, as a wild charge of motley savages ignorant of discipline, of supplies, of transport, or of lines of communication. He does not tell us that the defeat at Tours occurred a century after the first westward advance from Arabia, or that the Saracens in Spain had their base at Damascus. He tells us that the average Crusader was a match for four or five "infidels," but does not explain why the Saracens finally drove the Crusaders out of Palestine. He says nothing of the exploits of Saint Louis of France at Damietta.

From this historical survey he passes to an examination of Arab intellect, and argues that the omission—in the books of Symonds and Pater—of any reference to Arab influence on the Renaissance movement in Europe shows that Arab science and philosophy was of no account, that their chemistry had become debased with alchemy, their astronomy with astrology. I hesitate to venture on to such debatable ground, but perhaps there is some scholar here to-night who can tell us whether algebra and chemistry owe nothing more to the Arabs than their names, and whether the science, the mathematics, the faience and metalwork, and the philosophy of the Renaissance were in any way influenced by the schools of Saracenic thought. "The whole Arab episode," says Mr. March-Phillipps, "dropped out of the life of Europe" like a dream. For the Arab had no reasoning faculty like the northern nations. He was a creature of blind impulses, of hasty and ill-regulated passions.

And finally he proceeds to interpret Arab architecture as a reflection of these characteristics in the temperament of the race—furious energy, fickleness, weakness, and instability. He begins by quoting Fergusson, to the effect that "the Arabs had no architecture, properly so-called"—surely a curious statement to advance in support of a violent attack on that very architecture. According to him they were incapable of any creative art themselves, so they borrowed, from each country that they conquered, the skill of its native craftsmen. Yet at the same time he stigmatises them as iconoclasts who destroyed every beautiful thing that they found, casting away the dignified arches and vaults of the Romans, the massive columns and lintels of the Greeks. Yet while helplessly leaning on native artists with one hand and tearing down all the glories of native art with the other, they somehow contrived (in spite of their weakness) to force upon the reluctant civilisations of the past certain novel features of design which caused these old-fashioned arches and lintels—so he tells us—"to buckle and bend in all directions like a child's toys"!

He does not tell us that the chief reason for breaking away from the traditional architecture of the Copts, the Syrians, and the Byzantines—all Christian nations—was an essentially religious one,

that in the architectural forms of the mosque as well as in its arrangements it was desired to avoid any similarity to the details of a Christian church. But just as the early Christians themselves at first avoided the pomp of the Pagan temple-style, and finally swallowed it whole, so the Arabs, a race of warriors, eventually found it convenient to make use of the trained Christian craftsmen in the rich towns that they conquered. As iconoclasts they had no blacker a record than the Christians, and an impartial reading of the history of Jerusalem does not increase our admiration for the Crusaders when massacres and mosque-burnings are in question.

His generalisations are altogether too sweeping, and one proceeds with some relief to his more detailed examination of the Saracenic—or, as he calls it, the Arab—style. First and foremost is the debasement in the form of the arch. These are his words:—

> "Stilted arches, horse-shoe arches, pointed arches, ogive arches, arches curved and foliated and twisted into a thousand nameless and inexplicable designs, arches inverted and standing on their heads, arches with *voussoirs* elaborately tangled and interlaced—such are a few of the varieties which occur more or less freely in all Arab buildings."

Even if this statement were confined to Spain and India, where Saracenic art appears in its most florid forms, it would be a gross exaggeration, but applied to Arab architecture in general it is utterly baseless, and is especially untrue of Egypt and Syria, where the purest forms are found. The characteristic arches of the Saracens—the horseshoe arch in two varieties, the Persian or keel arch, the uncommon cusped arch, and the ordinary semicircular and pointed forms—will be mentioned later in this Paper, as also the elaborate joggled *voussoirs* found in the later periods in Cairo and elsewhere.

His second criticism arises from the first just quoted, but is more readily admissible. He maintains that these new and debased arch-forms are structurally unsound, and frequently require lateral support by means of iron or wooden ties. Here he does indicate a real defect, to which I shall return later, but he does not mention that this practice was probably due to the prevalence of earthquakes.

His third point for condemnation is the frequent use of antique marble columns as supports for the ranges of arcades found in many of the mosques. Yet he omits to state that this practice, questionable rather than reprehensible, was not adopted generally, as he implies, but only in a limited number of buildings.

He next claims that the geometrical patterns used so largely in Saracenic ornament are restless to the eye, and thus furnish another example of the fevered spirit of the desert. But those scholars who have made a special study of this geometrical ornament have come to the conclusion that it is based on a mathematical system such as delights the contemplative Oriental mind, while others see in them a mystical interpretation. However this may be, it is quite certain that this Saracenic ornament—far from being hurried and slapdash, as Mr. March-Phillipps would have us believe—is executed with the amazing patience and skill of the Eastern craftsman, in fact, with a delicacy unequalled in the whole history of art.

Lastly he states that the masonry is slovenly, the joints wide, the mortar bad; that there is no dignity in the ruins of Cairo; that the buildings fall to pieces because so hastily put together; and that behind all the profuse ornament there is no stability. I cannot believe that any person who knows the mediæval monuments of Cairo at all thoroughly would support such a statement. The masonry of the mosques from the end of the XIth to the beginning of the XVIth century—*i.e.*, the whole period of Arab masonry construction—in Cairo is conspicuous for its excellence. The joints are fine, the mortar certainly adequate for such a climate, where resistance to frost and rain is hardly worthy of consideration. And the mediæval remains of Cairo are probably more numerous and in better preservation than those of any city in Europe. The walls, the gates, the Citadel, hundreds of mosques, numerous houses, still stand: surely there is no other city where so much survives to tell the story of the past. Cairo had no rival in Egypt during the Middle Ages, and the great cities of Syria—Jerusalem, Damascus, and Aleppo—were always of inferior importance, except in the early centuries of Arab

dominion, when architecture had not yet attained the level that it reached under the Mameluke sultans of Cairo. Moreover, all the Syrian cities were continually exposed to "religious" and other wars which destroyed most of the religious buildings that would otherwise have survived.

I have endeavoured to present the case advanced by Mr. March-Phillipps, against "The Arab in Architecture," with absolute fairness, and to point out wherein it appears to me to fail. He himself demands that criticism of this difficult style should be rational and not romantic; yet surely rational criticism should be judicial and based on the average qualities of the buildings criticised, not on isolated examples carefully selected to support a theory which though not exactly romantic is highly imaginative. I now turn to a very brief, and as far as possible impartial, survey of the architecture of the Saracens in Egypt and Palestine, with a view to attempting an unbiassed judgment of its merits and defects. It will be illustrated by slides made from my drawings, and where possible from my photographs.

II.

Critics have raged for many years over the name and the origin of this architectural style. There is a choice between three terms—"Arab," "Saracenic," and "Muslim" (or "Muhammadan"). The first was chiefly used by the French writers of last century who did so much to popularise and expand the style—Prisse d'Avennes, Bourgoin, Gayet, Coste, Girault de Prangey—also by Professor van Berchem and by a few Italian and English writers. It has also received official sanction in the name of the *Musée Arabe* in Cairo, and in that of the *Comité de Conservation des Monuments de l'Art Arabe*—the office in Egypt that fulfils the same function as our Ancient Monuments Commission. The name implies the art that was produced under Arab dominion. But it has been severely criticised in certain quarters on the ground that the Arabs themselves in the early—or "whirlwind"—days, when they swept from the Hijaz across Western Asia, Northern Africa, and Spain, were uncivilised barbarians, carrying with them, as Rivoira says, "only the scimitar and the Koran," and depending entirely on the talents of native craftsmen in the conquered countries for their architecture.

The chief supporters of the name "Saracenic" are two Englishmen, of such authority on the period that their opinion is valuable—Fergusson and Lane-Poole. The latter has defended his view very ably, pointing out that it is an ancient name of uncertain derivation, given during the Middle Ages to the wild tribes of the Eastern deserts. Gayet makes fun of it as a nickname, suggesting that if this term—signifying no more than a band of brigands—is to be used as a serious title for an architectural period, we might, on the same analogy, describe French architecture of the age of Louis Treize as *mousquetaire*. But England has accepted "Gothic" and "Baroque," both originally nicknames, as architectural terms, and it must be remembered that a word which at first may have been indefensible does, after the usage of centuries, pass into our vocabulary as good English.

It is for this reason that I have hesitated to adopt for my subject the title which has of late found favour among the most learned authorities—"Muslim" (or "Muhammadan") architecture. It has been used by M. Saladin in France, by Comm. Rivoira in Italy, by Franz Pasha in Germany, by Strzgowski in Vienna, by Creswell in Cairo, and by many other writers. It implies that in all this architecture, from Turkestan and India to Spain and Morocco, there is a common religious basis. But it does not yet convey to the ordinary English reader, as does the word "Saracenic," the special meaning of the art of those countries—Syria and Egypt—where the Crusaders fought and where they familiarised this nickname, if such it be. Nor does it seem correct to speak of a "Muhammadan" dwelling-house in Cairo or a "Muhammadan" castle, any more than it would be appropriate to describe Waterloo Station in London, or the *Folies Bergères* in Paris, as "Christian" buildings.

I hope that some of the eminent scholars who are here to-night will give us their views on this question, as I am anxious to find a really definite title for a book of mine, on the subject of this lecture, which is to be published shortly. The photographs and drawings displayed round these walls have been collected for illustrations, though the collection is still far from complete.

III.

Even more violent controversy still rages over the origin of Saracenic art between defenders of various theories, each diametrically opposed to all the others. Broadly speaking, it may be said that Gayet attributes it to Coptic Egypt, Strzgowski to Byzantium, Rivoira to Rome, Dieulafoy to Persia, and Havell to India. Seats astride the fence are occupied by Fergusson, Lane-Poole, and Saladin, and I hope that the same safe if inglorious perch will bear my slender weight in addition, but there is no time to-night to venture on to so difficult a topic.

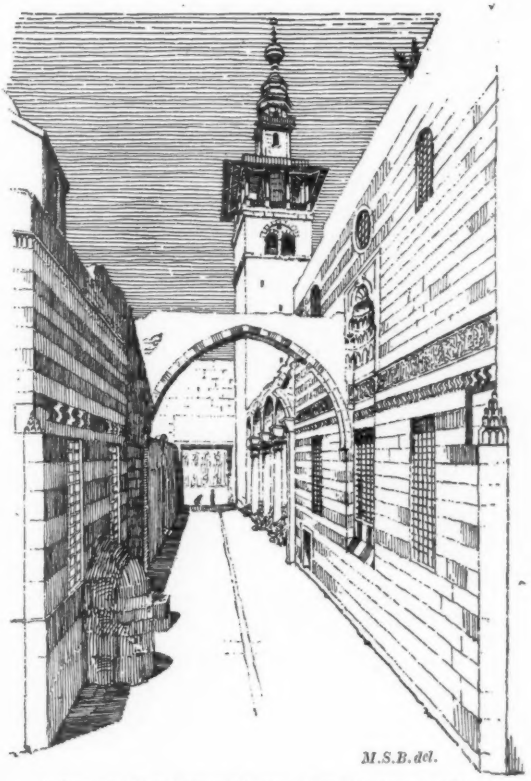
The first mosque was built by Muhammad at Medina in A.D. 622 and was a primitive enclosure or yard with low walls. Adjoining were bare apartments for the Prophet and his wives, also a well. The roof was of palm-trunks and mud. Later a portion of the enclosure was covered with a similar roof, to form a shelter from the fierce rays of the sun, and finally this feature was extended round all four sides of the court. Then there was evolved a *kibla* or point in the wall towards which worshippers had to face when they prayed. This came to indicate the direction of Mecca, and the *kibla* wall was distinguished by a semi-circular niche—the *mihrab*—the origin of which is a bone of contention. It may have sprung out of anything from a Christian apse to a Buddhist image-niche, or even out of the brain of some pious Muslim craftsman. In the fulness of time Muhammad added a primitive sort of wooden pulpit, the *mimbar*, of which again the origin is uncertain. But in spite of this absolute lack of anything approaching architecture, as we understand it, in this elementary structure, it already contained the essential features of the mosque plan: the square open court or *sahn* with a covered portico or *liwan* on each of the four sides, the *mihrab* or prayer-niche on the *kibla* wall, the *mimbar* or pulpit adjoining, and some provision for ceremonial ablution. But the most striking feature of the mediæval mosque—the minaret—was a later addition, and was instituted to allow the *muezzin's* call to prayer to be heard over a wide area, without recourse to the bells used by the Christians. At first it was a rough tower without any grace of form.

Within a few years, as the conquerors swept east and north, other mosques were built, notably at Mecca, at Cairo, at Kairawan in Tunis, and two at Jerusalem. Of these I will only touch on one of the last-named, because the other examples have been so often rebuilt and so much altered that they have practically lost their original appearance and therefore only confuse a study so necessarily brief as this is.

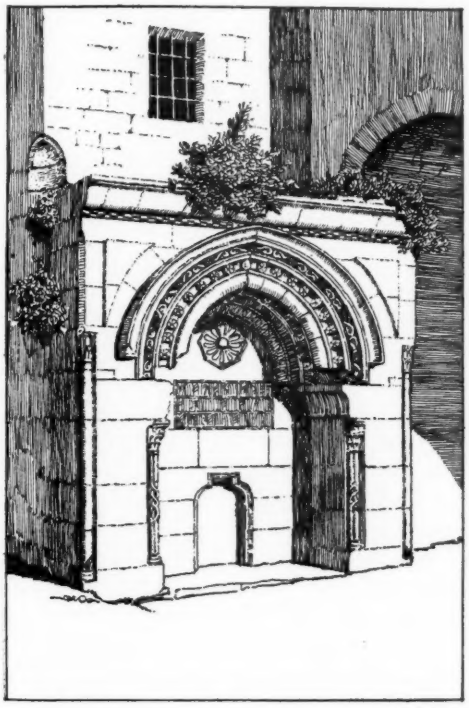
The Kubbet as-Sakhra ("Dome of the Rock") at Jerusalem, commonly called the "Mosque of Omar," was erected shortly after the Arab conquest of the city in 639. Among the chief buildings of the Saracens it displays more than any other the strength of Byzantine influence, and for this reason it is not typical of the style. Whereas the normal mosque was planned as a place for congregational worship, the "Dome of the Rock" was primarily a shrine, under which lay the ancient rock that was believed to be Abraham's altar of sacrifice. The object of the Saracens in venerating this spot is easily understood, for it provided an alternative to Mecca as a place of pilgrimage, and from the beginning the early Muslims had much sympathy with the Jewish faith. The site was already revered by the Jews as the site of Herod's demolished temple, and was suited by nature to its purpose. Indeed, as we see it to-day, the Haram esh-Sherif, or sacred enclosure, provides this mosque with a finer setting than any existing Arab monument, and is without any rival even in Cairo, where all the mosques lie either in crowded and narrow streets or on the desert. Externally the building is of octagonal form with four porches. Within the outer wall is a wide aisle, then another octagon formed of piers and columns. From the columns spring semi-circular arches or dosserets, and ties are used across the springing. Another circular range of columns carries the dome. Professor Lethaby regards this as a Hellenesque building imbued with Byzantine influence, whereas Rivoira attributes the plan, like everything else in Arab art, to Rome. It is uncertain whether the interior structure remains unaltered, also whether the range of large external windows is a later work, but it is quite certain that the magnificent tile casing of the exterior dates from the XVIth century.

The great Ummayad mosque at Damascus is like the last-named building, a highly controversial subject. It was erected early in the VIIIth century on a site previously occupied by a Christian church, earlier still by a pagan temple. Damascus had by this time replaced Medina as the capital of the Arab Empire, then at its greatest extent. But though archæologists have been chiefly concerned as to the relative positions of the temple, the church, and the mosque, an architect finds it important for three main features: (i) the principal or Mecca *liwan* enclosed on all sides instead of being open as usual to the *sahn*; (ii) the round horse-shoe arches used here for the first time in the history of Saracen art; (iii) the *Madinat al-Arus*, the oldest surviving minaret in Syria, probably of the Xth century. No important monument survives from the century and a half following the Great Mosque at Damascus.

We may now turn to the famous mosque of Ibn-Tulun in Cairo, built 876-879, for Cairo was



DAMASCUS: THE GREAT MOSQUE. THE MADINAT AL-ARUS. (Probably Xth Century.)



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JERUSALEM: FOUNTAIN (*Qaṣtal*) IN STREET OF EL-WAD. (Probably XVIth Century, but showing influence of Crusaders.)

now a large city, the seat of the governor of Egypt, Ibn-Tulun, formerly a Turkish slave in the service of the Caliph of Baghdad. His mosque is perhaps the most noteworthy building in the whole history of Arab art. In plan it follows closely on the Mecca model, with a great central court, *liwans* on each side—that facing Mecca and containing the *mimbar* and *mihrab* being the widest—and a remarkable "corkscrew" minaret. The latter is almost certainly copied from the old Malwiya mosque at Samarra near Baghdad, erected in 846–852, and the Samarra plan also has points in common with the Cairo plan. Ibn-Tulun spent some time at Samarra during his military training, and his mosque at Cairo is as certainly Mesopotamian in type as the "Dome of the Rock" is Byzantine. The use of burnt brick is Mesopotamian. The battlements round the *sahn* are of Sassanian type, and there are cusped niches at

Samarra just like those at Cairo. But most important of all is the use in this mosque, for the first time in a really constructional form in architectural history, of pointed arches, resting on massive brick piers with engaged shafts at the angles. Here we see an absolutely new method of building —long arcades of pointed arches, slightly horse-shoe in form, built of burnt clay bricks, covered with fine plaster, and decorated with ornamental roundels.

From the time of Ibn-Tulun there is another long hiatus in the list of noteworthy buildings surviving to us. Then under the dynasty of the Fatimids (969–1171) certain developments took place in mosque building. The mosque of Al-Azhar (970) in Cairo is familiar to most tourists as the seat of the picturesque Egyptian "University" (so-called), but of the original building little more than part of the arcades remains, with Persian or "keel" arches, a form used more freely in Persia and Mesopotamia than in Egypt or Syria. Both this mosque and that of Al-Hakim (990) not far away were great "congregational" mosques, like that of Ibn-Tulun, planned to accommodate the whole population of Cairo for the Friday prayers. In 1085 was built the curious little mosque of Al-Guyushy on the wild hills above Cairo. It is constructed of stone with a simple domed minaret, very like contemporary examples in Sicily, and over the principal *liwan* is a larger dome carried on niche-pendentives. It was built by the commander-in-chief of the Egyptian army, an Armenian by birth. He also built a large part of the present walls of Cairo, including several of the gates, and in these, as in his mosque, we see the introduction of elaborate masonry and vaulting, as well as of the Byzantine science of fortification. The small mosque of Al-Aqmar (1125) shows the first façade-design, as well as the first known use of that extraordinary and most characteristic feature of the Arab style, "stalactite" ornament.

The period of Saladin and the Crusaders was marked by further progress in military architecture, masonry, and dome construction. The Citadel at Cairo, commenced by Saladin in 1176, was no doubt influenced by the fortresses of the Crusaders in Palestine, and that at Aleppo, a composite structure, maintains the same tradition. The mark of the Crusaders is equally to be seen in the streets and fountains and gates of Jerusalem that the Saracens erected centuries later, and a comparison of these buildings with typical Crusader churches leaves no room for doubt as to the importance of this intercourse. [*Here followed a number of lantern slides showing the Crusader influence.*]

I may say that I have recently dealt with Fatimid architecture in the *Burlington Magazine*, and am discussing the work of Saladin as influenced by the Crusaders in the January number.

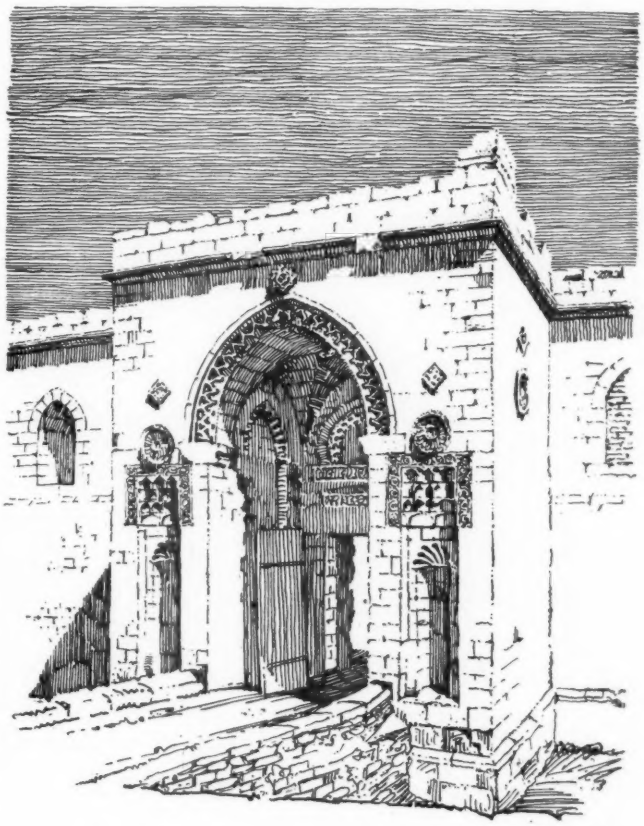
IV.

But the golden age of Saracenic architecture in Egypt and Palestine was the period of the Mameluke sultans from 1250 to 1517. The word *mamluk* in Arabic signifies a "slave." It had been employed centuries earlier at Baghdad, where the Caliph had formed a bodyguard of slave-soldiers drawn from the Turcoman tribes of Central Asia. One of these mamelukes was Ibn-Tulun, another was Saladin, and it is a curious thing that almost all the best architecture of the Saracens was produced under the direct inspiration of these foreign soldiers, for from their ranks came to be chosen the Sultan of Egypt, who was, almost without interruption during the Middle Ages, the ruler of Palestine also. Cairo now became by far the most important city of these rulers, and at the same time the most luxurious and beautiful capital in the Near East. Professor Lane-Poole has shown that Cairo, not Baghdad, was the real scene of the "Arabian Nights." But out of hundreds of buildings still remaining from the Mameluke period I have only time to mention a few typical mosques.

One of the first Mameluke sultans was Bibars (1260–1277), who built a large congregational mosque on the Abbassia road outside Cairo. With its long bare stone walls, battlements, and massive porches, it looks more like a fortress than a mosque. To architects it is important for the ornament of these porches, showing Crusader influence, and for the geometrical plate-tracery of its windows or *kamariyas*. In its plan it follows the traditional type, but the great façade is treated as a definite design, not merely as an enclosing wall.

Perhaps the most beautiful building in all Cairo is the tomb-mosque (1284-1285) of Sultan Qalaun. This is an entirely new type, and the chief feature in all tomb-mosques is the dome over the tomb itself. Hereafter the dome came to be the principal factor in Cairo architecture, and was often skilfully used in contrast with the slender form of the minaret. The interior of this building is decorated with rich ornament in marble and other precious materials, and the striped façade—probably the prototype of striped façades in Pisa and Genoa, whither sailors brought back ideas from Egypt—is a beautiful composition again showing Crusader influence. The windows here are specially noteworthy.

Another different form of mosque is to be found in the enormous Madrassa of Sultan Hasan (1356-1363) in Cairo. A *madrassa* is a collegiate mosque and has a cruciform plan, there being a deep recess or *liwan*, for the use of the four sects of Islam, on each side of the central open *sahn*. A huge pointed arch opens from the *sahn* in to each of these recesses. This type was evolved at least 200 years earlier at Damascus, but the Mosque of Sultan Hasan is its finest example. Besides the *madrassa* proper there is a domed chamber containing the sultan's tomb. To my mind the austere interior of the great courtyard furnishes the strongest possible argument against the view that Arab architecture is always fickle, unstable, and weak. The severe simplicity of the design is only relieved by the foliated parapet or battlement silhouetted against the sky, and by the magnificent stucco frieze in low relief round the Mecca *liwan*. Externally the building has a dome, and two minarets of different dates, but the chief features are the lofty façade, 113 ft. high and 500 ft. long, culminating in a great stalactite cornice,



M.S.B. del.

CAIRO: MOSQUE OF BIBARS EZ-ZAHIR (1266-9), SOUTH PORCH.
(Showing Crusader influence.)

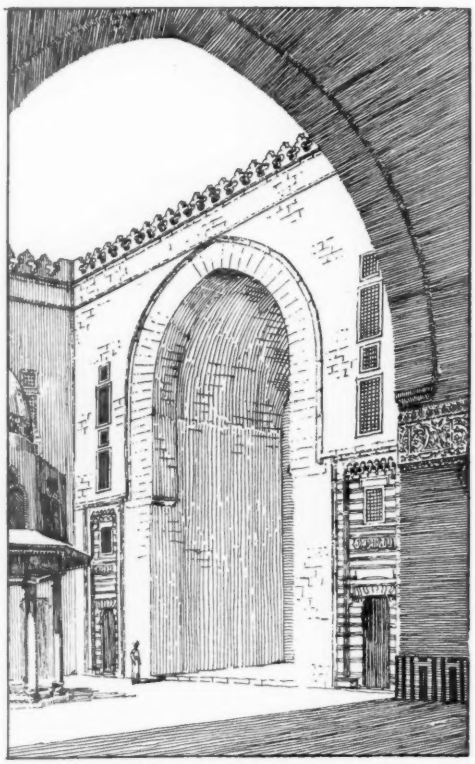
—though bold cornices are seldom found, and possibly this may be an innovation from Europe,—and the magnificent porch with stalactites over.

In the latter half of the Mameluke period was built the wonderful series of tombs in the desert east of the city, wrongly known as the "Tombs of the Caliphs."

Of these the earliest, largest, and most remarkable, is the great convent and tomb-mosque of Barquq, erected by Sultan Farag in 1400-1410. This preserves in its main outlines the form of the congregational mosque, with the addition of a domed tomb-chamber at either end of the Mecca *liwan*. It is commonly said of Saracenic architecture that it is not symmetrical in its planning or grouping, but in the examples that I have illustrated on the screen we find almost absolute symmetry. The

principal elevation in this case is approximately symmetrical, though one of the minarets has lost its top stage. The south-east elevation, towards Mecca, is perfectly symmetrical. The chief features of the building are: (i) the fluting of the domes, used to break up an otherwise plain surface that is always unpleasantly dazzling in the glare of the East; (ii) the arches of the *liwan*, recalling Crusaders' cloisters; and (iii) the graceful form of the minaret.

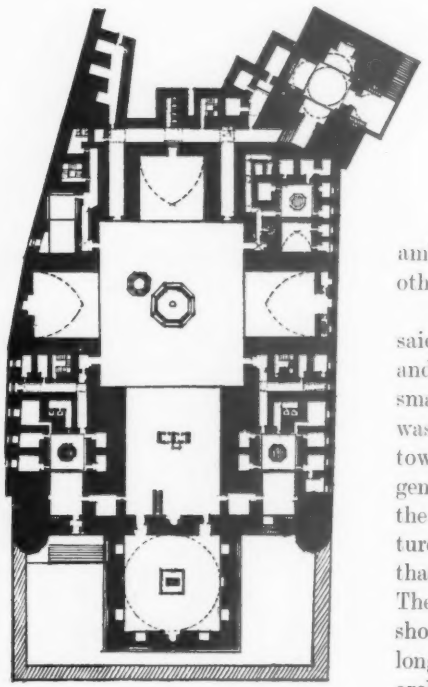
In the succeeding century, particularly under the Sultans Qayt-Bay and Al-Ghury, Saracenic art reached its culmination, and a number of splendid buildings were erected, chiefly in Cairo. They are notable for: (i) the profuseness and delicacy of their ornament; (ii) the slender beauty of their minarets; (iii) the studied grouping of minarets and domes; (iv) the harmonious relation of all details of both interior and exterior. The *madrassa* plan came to be the most popular, but the central court was roofed with a lantern or dome. The tomb-mosque of Qayt-Bay (1472-1474) is the most ambitious of the long list, and may be taken as typical of the others.



M.S.B. del.

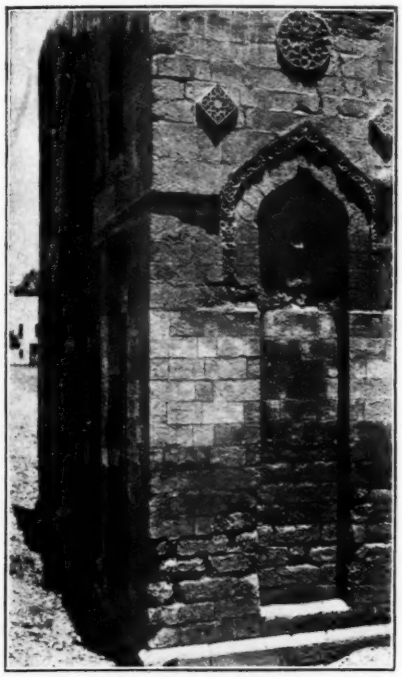
CAIRO: MOSQUE OF SULTAN HASAN (1356-63). VIEW OF INTERIOR COURT (*Sahn*).

(From the same author's *Through Egypt in War-time*, by permission of Messrs. Fisher Unwin, Ltd.)

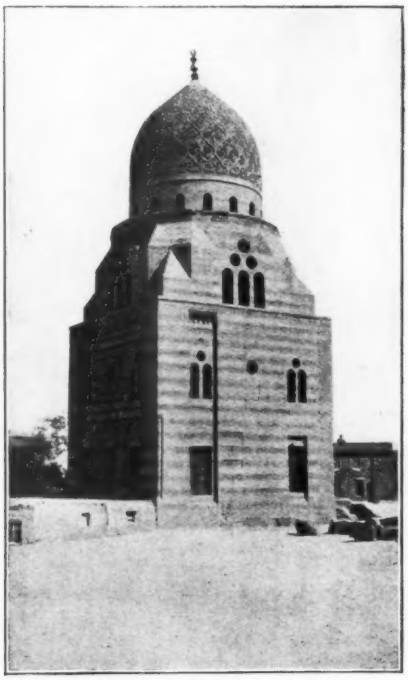


CAIRO: MOSQUE OF SULTAN HASAN (1356-63): Plan.

Speaking of Mameluke architecture in general, it may be said that mosque-planning showed a progressive development, and that the later mosques, though in most cases comparatively small, displayed an increasing richness of craftsmanship. Stone was always used, and the picturesque brickwork found in the towns of the Egyptian Delta is of later date. The masonry generally is of excellent quality, and of limestone obtained from the Muqattam Hills. Throughout this long period the architecture of Cairo was far more important and of greater excellence than that of all the other towns of Syria and Egypt put together. The favourite arch form was a pointed horse-shoe, but the horse-shoe was never exaggerated, the curves of the arch being prolonged very slightly below the springing. The round horse-shoe arch and the Persian arch are hardly ever found, the cusped arch very occasionally, whereas simple semi-circular and stilted



CAIRO: MOSQUE OF BIBARS EZ-ZAHIR. DETAIL OF PORCH (1266-9).

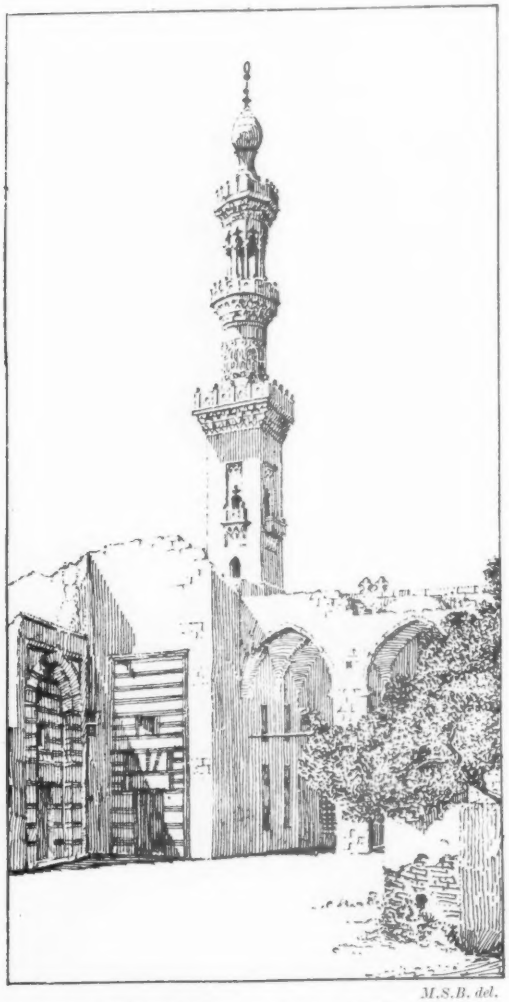


CAIRO: TOMB-MOSQUE OF TUMAN-BAY AT ABBASSIA (1517).

CAIRO: BAB ZUWEILA (1087)

CAIRO: DOORWAY OF MOSQUE OF GOHAR AL-LALA (1430). *(Photos by Author.)*

semi-circular arches are common. The chief structures of Mr. March-Phillipps thus hardly apply to the architecture of Egypt and Palestine. But his objection to the use of wooden ties across the springing of arcades is well founded in those cases—and they are not very numerous—where it applies. The architect of Ibn-Tulun's mosque boldly dispensed with ties and provided heavy piers, but many of his followers, who preferred to use slender columns of antique marble—and with much more success than Mr. March-Phillipps admits—apparently did not dare to discard these undesirable expedients.



M.S.B. del.

CAIRO: MOSQUE OF BARQUQ, *extra muros* (1400-10): INTERIOR.

(From the same author's *Through Egypt in War-time*, by permission of Messrs. Fisher Unwin, Ltd.)

The outline of the characteristic Cairo dome, slightly stilted, is probably familiar to you all. It is never (except in a few cases in the so-called Tombs of the Mamelukes, due to Tartar influence) of the bulbous type frequently regarded as typical of Saracenic architecture, but really peculiar to Persia and Turkestan. The outer surface was successively decorated with vertical fluting, with diagonal fluting or "chevrons," with geometrical arabesques, and finally with foliated arabesques of great delicacy. The early domes were supported on niche-pendentives, but stalactites were substituted in later examples, with an increasing complexity and lightness as the XVth century advanced. Apart from dome construction, vaulting was little used by the Saracens, except in gateways and fortresses, where they seem to have derived their knowledge from the Crusaders, or at any rate from Europe. Nor did the Mameluke architects ever evolve any "orders." They were content to utilise marble columns as they found them, increasing their height by means of Byzantine pedestals and dosserets or of a curious stalactited block, not exactly a dosseret, above the capital. This supported the arch.

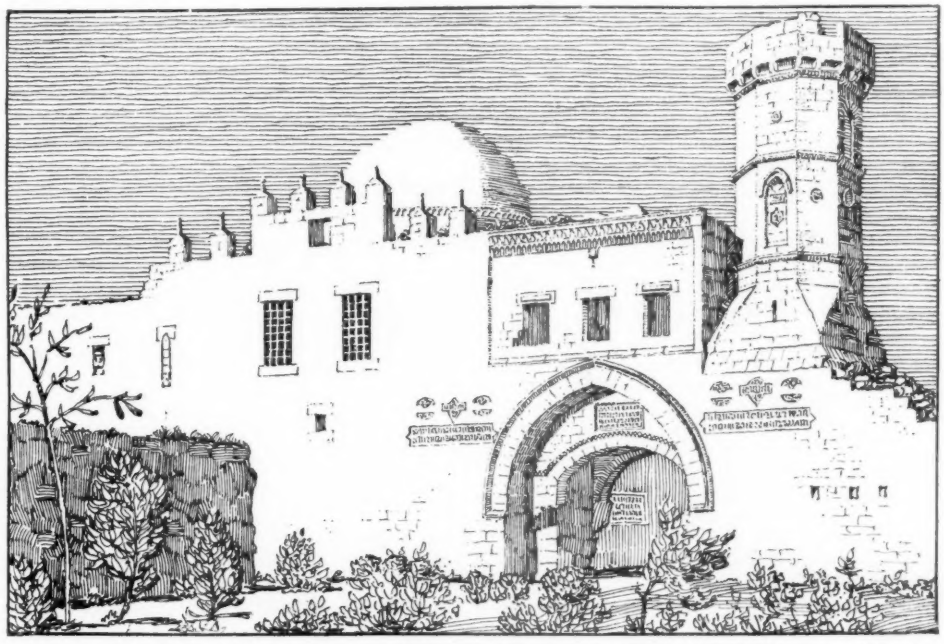
The façades of the mosques, and the walls of their inner courts, were crowned with indented or foliated battlements. Before the Mameluke period these had consisted of geometrical pierced parapets; the next stage was a curious saw-tooth type that seems to have had its origin in Mesopotamia, and later appeared in Central and Northern Italy (an example akin to this last type is found at the Doge's Palace, Venice); and Mameluke buildings of the last phase have more or less elaborate foliated parapets, not unlike Gothic cresting.

One hardly ever finds a Saracen building crowned by a cornice. Similarly, the Arabs never utilised mouldings with any effect, but there is a charming type of strapwork or interlacing ornament that is frequently used round arches where Gothic masons would use a dripstone.

The Arabs seem to have aimed at breaking up all flat surfaces which would otherwise have been glaring, and decorating them in very low relief. There is one very beautiful stucco frieze in the Mosque

of Sultan Hasan that serves to illustrate three of the leading characteristics of Saracenic ornament: (i) the decorative use of Kufic lettering; (ii) the conventional type assumed by floral forms (the use of living animal and vegetable forms in decoration being forbidden by Muslim tradition), and (iii) the lowness of the relief and the delicacy of its execution.

The chief feature that is peculiar to the Saracenic style is the curious geometrical form known as the "stalactite." Its origin is still quite uncertain, and it does not seem to have existed prior to the Mosque of Al-Aqmar at Cairo. It consists of tiers of projecting niches, angular or curved or plain. It is used in the pendentives of domes, in the vaulted heads of porches, in capitals, brackets, and cornices, and in most cases involves very great skill in craftsmanship.

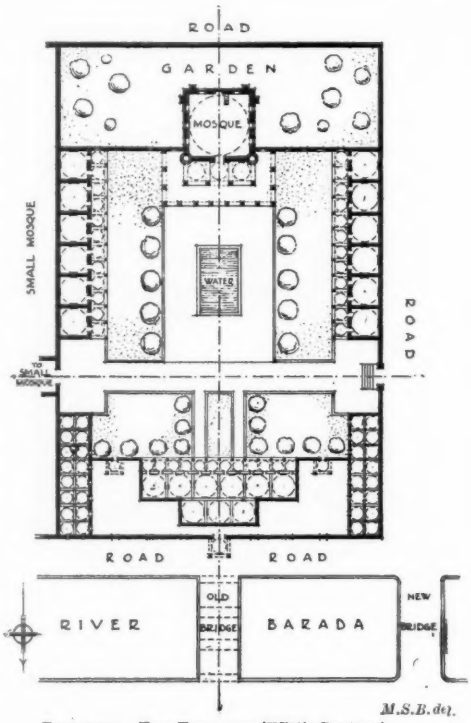


KHAN YUNUS, NEAR GAZA: MOSQUE OF THE EMIR YUNUS ED-DAWADAR (late 14th Century). *M.S.B. del.*
(A building very familiar to soldiers during 1917.)
(From the same author's *Through Egypt in War-time*, by permission of Messrs. Fisher Unwin, Ltd.)

Joggled voussoirs afford another outlet for the skill of the mason and the marble worker. The example illustrated is one of the most elaborate of all, but on the same slide you see the most familiar type of decoration for the *mihrab* and the *mimbar* in the Mameluke architecture of Cairo.

Saracenic woodwork is renowned for its elaboration, though this elaboration was usually dictated by practical reasons. For instance, the beautiful turned lattice-work known as *musharabiya* was designed to permit the inner rooms of a house to be simultaneously shaded and aired while preventing the inquisitive male from seeing the women within, though they could watch the happenings out-of-doors without being seen themselves. And the delicacy of panelled woodwork was conditioned by the shrinkage of timber under the blazing Egyptian sun, so that small panels were essential. If there are any of you here who are unfamiliar with the minor arts of Arab craftsmanship, the inlay in ebony and ivory, the dainty *kamariyas* or traceried windows filled with coloured glass, the marble dados in quiet tones of grey and blue and white, the wonderful lamps that hung in the mosques, you will find them all illustrated in the works of Prisse d'Avennes and of Bourgoin in our Institute Library; and there is a fair collection of examples in the South Kensington Museum.

The Turkish conquest of Egypt and Palestine in 1517 put an end to the Mameluke sultans and caused an immediate change in architectural forms. Though the Saracen tradition in building has never really died, the Turkish conquest brought about a cessation of mosque building and a deterioration in design. The mosques of Constantinople made their influence felt in Cairo, but the Tekkiyet at Damascus is the best example of this new school, and is noteworthy as having almost the only good "lay-out" among the mosques of Egypt and Syria. But with this architecture, as with the admirable domestic work of the Saracen and Turkish periods, I cannot deal here.*



DAMASCUS: THE TEKKIYET (XVIth Century).
Sketch plan of lay-out. No scale.

V.

In attempting any general estimate of the character of Saracenic architecture we are apt to be led by our Northern habit of mind to compare a mosque with a Gothic church. But they are completely different buildings. The mosque is a place for individual prayer and for congregational worship, even for preaching, but there is no long-drawn approach to an altar at the end of a vista, no carefully graded stages of mystery and holiness. It is a very democratic and hospitable place of worship, very free from priestcraft, and yet its devotees display—in their own way—a reverence that competes very favourably with the Easter orgy at St. Peter's or the annual hurly-burly at the Holy Sepulchre in Jerusalem.

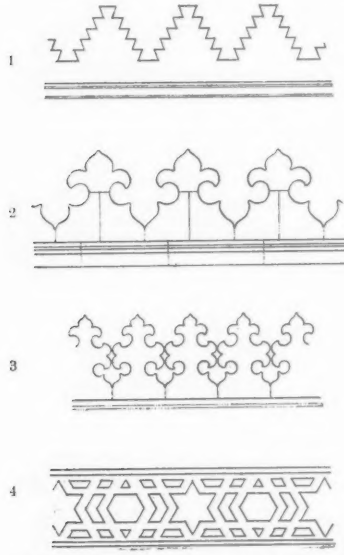


Diagram showing various types of parapets used in Cairo. No. 4 is from the mosque of Al-Hakim (990), No. 1 is frequently used in the earl Mameluke period, and Nos. 2 and 3 in the late Mameluke period.

I believe it is fashionable nowadays to sneer at Fergusson, mainly because his books do not contain collotype plates. But he could write about architecture with scholarship and authority, and rather than attempt some flowery peroration for my simple study of Saracenic art, I prefer to conclude by quoting, without qualification or cavilling, Fergusson's measured verdict on the style:

> [The Saracens] "can in no instance be called a great people; nor do their works ever reach true grandeur nor even affect sublimity. Beauty was their aim; and gifted, as nearly all the nations of the Moslem world were, with an exquisite sensibility and the keenest perception of the beautiful, they

* My articles on "Roman Tradition in Moslem Architecture" and on "Fatimid Architecture in Cairo" have appeared in the *Burlington Magazine* for March, September and October of this year; further articles are appearing on "The Architecture of Saladin and the influence of the Crusaders" and on "The Arab House"; and my book on *Saracenic Architecture* will shortly be published by the Oxford University Press.—M. S. B.

attained to this by means of a degree of taste and refinement which seems innate in them. The grace and elegance of their architecture has never been surpassed. In the higher qualities of art, this style is certainly inferior to the Egyptian, Grecian, or Gothic style; but it surpasses them all in endless fertility of invention, as well as in the variety of ornament and detail which lend such a charm to every work they ever produced. . . .

"Art is not confined to one or two forms, and is not to be confined by figures or by rules, but is everywhere and in everything for those who seek it honestly and for its own sake."

DISCUSSION OF MR. BRIGGS'S PAPER.

MR. WALTER CAVE, *Vice-President*, in the Chair.

Professor T. W. ARNOLD, Professor of Arabic at the School of Oriental Studies, in proposing a vote of thanks to Mr. Briggs for his paper, said that before an audience of experts he could hardly be expected to say anything on the subject of architecture. But he would like to express his admiration for Mr. Briggs's scholarship and his lucid exposition of his subject; also his pleasure in seeing the beautiful slides, which showed that even photography might count among the fine arts, and the exquisite drawings, which revealed Mr. Briggs's fine appreciation of architecture and his artistic sense. A matter on which Mr. Briggs invited criticism was the use of the word "Saracen." No Arabs, indeed no Mohammedans whatever, used that term to describe themselves. It was met with first in Europe in the Greek writings of the Byzantine historians, who used this term for those Moslem enemies with whom they were engaged in a life-and-death struggle, those enemies who ultimately swept them out of existence. From the writings of the Greek historians it passed into Latin, and was the common term with which the Latin chroniclers, especially the historians of the Crusades, described their Mohammedan enemies. It was a matter of doubtful taste, when praising a people, to apply to them a term which was only used by their enemies. The Institute would hardly approve of a work on, say, Roman Catholic Churches if the stout old Protestant term "Papist" were used in place of "Roman Catholic." Nor would it be suitable that a scientific work on the Churches of Germany should have such a title as "A History of the Ecclesiastical Architecture of the Boche." There was a similar objection if they were speaking in praise of Moslem architecture and pointing out its finer aspects to their describing it as "Saracen." Mr. Briggs rightly described this architecture as a product of the Moslem faith, but the term "Saracen" was in existence long before Islam, so that for another historical reason the word was unsuitable for describing the architecture of the Moslems. The word was of great antiquity, and is supposed to be derived from the word "Sharrāku," which occurs even so early as in an Assyrian inscription of the eighth century B.C., where it was used of the Nomad Arabs of the desert. The Institute was to be congratulated in that this very noble and dignified architecture was now brought not only to their notice, but also, in Mr. Briggs's forthcoming volume, to the wider public in this country. With our close contact with, and our interest in, the Mohammedan world, it was a shame to us that, hitherto, the Moslem architecture of Western Asia had been so much neglected. He believed that no monumental work on this field of architectural study had come out since that of Fergusson, which was published more than fifty years ago. But during this period other European scholars had done a great deal. The discovery of Qusair Amra, and the careful study of Mschatta had thrown much light on the beginnings of this architecture; the excavations of Professor Herzfeld, the archæological tours of Sarre and others, had produced a vast amount of material which was unknown to Fergusson. The increased interest in the subject felt by the present generation would, he hoped, give Mr. Briggs's volume a warm welcome, a welcome which, from the small instalment of it he had put before them in his paper, they all felt it would fully deserve.

Sir BANISTER FLETCHER [*F.*] said it gave him very great pleasure to second the vote of thanks, more especially as, in 1914, he had travelled through Palestine and seen many of the buildings which Mr. Briggs had so graphically described. He was glad to hear the reference to Kairowan, near Tunis. When he (the speaker) visited it, ten years ago, it struck him as being one of the most impressive mosques that the Saracens had ever erected. From the point of view of architecture, this subject must be considered archæological. In the beginning of the nineteenth century, if the Martin Briggs of that period had taken so much trouble to talk about this subject no doubt we should have had a Saracenic Revival in London. But they should now be spared that, he thought. He would suggest that Mr. Briggs might well leave poor Mr. March Phillipps out of his book. Mr. March Phillipps could scarcely be considered a serious writer on the subject. It must be remembered that this was an Eastern style, and if ever there was a style which correctly reflected the people who were its constructors, it was this Saracenic style—as it was with any true style. So if any of our younger members were going in for that remarkable building which the President told them about the other day, and which he had been successful in arranging on such good terms for the architectural profession, namely, the hospital which was to be built in Cairo, they would have to consider how much

of the negative Saracenic art they were justified in putting into that building, which was to be one of the most monumental in Cairo. Mr. Briggs had omitted to speak of the influence on Spanish Gothic—that, no doubt, would be brought out in his book. Anyone who had travelled through Spain would have been amazed at the amount of Saracenic ornament which had been translated into terms of Gothic in that remarkable country, and it said much for the influence of those painstaking Moorish craftsmen that their work should have been copied to such a remarkable extent; and not merely copied, but altered and adapted to suit a particular purpose. Particularly was that so with some of the Saracenic ornament. The Mosque to Sultan Hassan, in Cairo, which was built for a special purpose, with its four enormous pointed vaults, converging from a central space, always struck him as one of the most powerful pieces of work in that delightful city. When it was remembered that the outside wall was half as high again as the façade of St. Paul's Cathedral, one could get an idea of the impression it produced on the beholder.

Mr. EDWARD P. WARREN, F.S.A. [*F.*] said that Mr. Briggs's lecture had interested him very much, for he had recently been in countries where specimens of Saracen—but which he preferred to call Mohammedan —architecture abounded, that is to say, in Mesopotamia, Persia and Egypt. Mr. Briggs had spoken of the bulbous dome as being peculiar to Persia and to Turkestan. But it was the almost invariable form in Mesopotamia ; except for the shallow domes, there were very few there which were not onion-shaped—and splendid domes they were. In Mesopotamia they were usually covered with glazed tiles, and sometimes with plates of copper, gilt. That was the case in the splendid mosques of Kazimain, Samarra and Kerbela. Tiles were general in Baghdad in particular, and were in patterns, coloured blue, yellow, black and green, with some white, the general effect being blue. These were extraordinarily ingeniously arranged on the bulb-shaped dome, and they must have been very difficult to set out in the patterns of the Persian type—foliated, spreading, converging over this double curve. They start with a straight neck, and then the dome sweeps up on an outward curve, and then there is a curve inwards again, like an inverted balloon, and the patterns have to follow these curves. He had the good fortune to be in Baghdad when the British Government had taken over the care of the Ecclesiastical Commission, and, with it, the care and upkeep of the mosques. There he made friends with an officer who spoke Arabic and who was in charge of the Commission. He (Mr. Warren) went with this officer into the mosques and on to their roofs. He was interested to know where the tiles were made, and asked to be taken to the tilery. To his surprise he found that the tiles were actually made at the mosque, being moulded from the clay, painted, and finished at the mosque itself. There was a small kiln opening into the courtyard of the mosque, where the clay was being fired. He saw a delightful and intelligent little man, in a green turban, who was kneeling on the flat of the roof of the mosque which he was repairing, and was painting with a long brush the tiles, which had been glazed to a coarse white glaze. The pigments were in powders, but did not represent the colours they were finally made into. The little workman took him to the kilns, and explained how he set out these curves for the dome which he was repairing. He fixed his paper to a dome of similar curvature, and drew his converging patterns upon that with great adroitness ; he then fixed them up and repaired the dome. At Samarra, of which Mr. Briggs showed a photograph, the great gilt dome against the blue sky, with its white minarets around it, was a magnificent sight. That very singular spiral tower which Mr. Briggs showed, he did not think was a minaret, because there was a strong suspicion that it was pre-existent to the ruined mosque close to which it stood, and up which he toiled. It was built of brick, and for no purpose except to ascend to a height. There was a 6-foot wide path going round the outside of it and no parapet. He found no difficulty in getting up, a matter of 170 feet or so ; but coming down again was not very pleasant. Seeing the descending spirals made one want to cling to the sides. The view from the top was amazing, because the whole of the country was scored by the remains of the ruined city, known as Eski Baghdad, consisting merely of mounds and fragments. It was said to have had a population of four millions, and to have been 30 to 40 miles long. To float slowly over the area in an aeroplane, as had been done, would give a good idea of it. From the little he had seen, the Mesopotamian mosque differed considerably from mosques in Egypt and in India. Material in Mesopotamia was hard to find, and all the stone must be brought from the mountains a considerable distance away. Therefore the builders in Mesopotamia had had to rely upon brick made from mud. The bricks of the poorer mosques were nothing but sunburnt bricks ; those of the better ones were fired bricks. The only fuel was desert scrub. Therefore the kilns had to be fed with this, which gave a rapidly-expiring fire, and so the bricks were not well burned. The builders trusted to plaster and tiles to get their effects. There was very little stone or marble to be seen, except what they called Mosul marble, which came from two miles outside Mosul. It was not marble at all, but coarse green veined alabaster. It bore the weather badly, and was not fit for external use, though it could be used for columns under cover. Mosul, in regard to the dilapidation of its surfaces, was one of the shabbiest towns he had seen. He thought the shape of the dome in Mesopotamia, and wherever else this bulbous form existed, grew from the difficulty as to the use of centering, or the lack of proper materials for centering, there being no native timber. Mr. Briggs had referred to "stalactites" and pendentives to carry the domes, and these were very common in brickwork. The Arab invariably built with his soft bricks square, and cut them after they were fixed. He was very good at brick cutting. His idea of the origin of pendentives was that it was a little

corbel. It was natural, when one wanted to advance from one plane to another, to form a little corbel, every second row standing astride the lower one. That seemed to be a natural explanation. But the ornament had caught the Eastern fancy, and it was used in many ways. In nearly all the courtyards in Persia and Mesopotamia there were wooden columns, and their caps were always in stalactitic form, carved in wood; or, when they were brick, almost invariably in plaster. He would like to add a few words about India. What struck him, during the short time he was in India, was that the construction was more competent and serious; but the Moslem architecture, as he saw it in Delhi and its neighbourhood, was frequently a lesson in what appeared to be successful, but what we should regard as bad construction. The great arches, with slight Ogive top, were built entirely without voussoirs, but in straight courses through the arch, and he had no doubt that the slight Ogive top arose from the fact that it would be difficult to finish it in any other way. And the curve at the top made it easier to place the last two stones and avoid the fracture which might occur from the two edges coming together. It must be remembered that all Moslem architecture belonged to hot countries, and the expansion of stone, brick or marble during the hot weather tended to the fracturing of points of contact. One thing Mr. Briggs had not alluded to was a characteristic of this form of architecture—viz., the extraordinary keying of lintels and arch stones together, not with the ordinary European joggle, or the twelfth or thirteenth century joggle joint, but with an extraordinary complication of curves and patterns to form the joint. He had seen them in a monastery near Mosul, in the arches and lintels of alabaster; they were said to be of the eleventh century, and not a single joint seemed to be disturbed. How they fitted these complications—like a jig-saw puzzle—he could not imagine. The feature which struck him most in the few great mosques he had seen in India was the immense height of the arches, gateways and porches, which entirely beat what they were accustomed to in Europe. There were tremendous porches in French cathedral west fronts, but they were on nothing like the scale of the enormous Indian doorways. For the most part, Moslem architecture had not much to teach them in the manifestation of fine proportion; it consisted mostly of magnificent detail. But in one instance he was, as it were, swept off his feet by admiration of the sense of proportion in the grouping of the buildings constituting the Taj Mahal at Agra; it had a marvellously perfect outlay of gardens, canals, fountains and symmetrically grouped buildings. There was a great white dome flanked by marble minarets and by mosques, each in turn flanked by their octagonal pavilions. It was, in its way, the most perfectly elaborated group of buildings he had ever seen in any country.

The CHAIRMAN, in putting the vote of thanks, said he thought he should be expressing the feeling of everybody present when he said how greatly honoured they felt at having His Highness the Emir Feisal with them. (Applause.) He wished also to express his thanks to Mr. Briggs for the wonderful collection of photographs he had placed on the walls for their benefit.

Mr. BRIGGS (in reply) referred to one or two points raised in the discussion. The Dome of the Rock at Jerusalem was, as Sir Banister Fletcher said, not precisely a mosque, but a sort of memorial chapel, a kind of shrine sheltering the sacred spot. Still, it would be technically described as a mosque. Mr Warren had spoken of the bulbous domes in Mesopotamia. Perhaps he had not made that perfectly clear, but owing to the pressure of time he had to abbreviate many things. It would have been more correct if he had said that these domes are found east of Egypt, in Mesopotamia, as well as Persia and India, but not in Egypt itself. Mr. Warren also discussed the question whether the minaret of Samarra was a minaret or some other form of tower. That was a difficult question, which had been discussed by many authorities, such as Sarre and Herzfeld, whose researches at Samarra were interrupted by the war. But the general summary of evidence favoured its being considered a minaret. He had said something about what Mr. Warren called the jig-saw joggle: he had shown one example which was so much a jig-saw that one could hardly see it was a joggle, but the idea was there. With regard to Mr. March Phillipps's criticism, he had been asked, before the lecture, "Why March Phillipps?" His reply was, "We have had a number of historians of architecture from inside the profession; should not we take more notice of what is said outside it? For every one who reads our books, probably ten read March Phillipps's." This Arab chapter of March Phillipps's was the only part of the book which had not been discussed by an architect. He had no wish to do anything but discuss his theory, which he thought was open to criticism.

Writing since the meeting, Mr. Briggs says:—

"Owing to the lateness of the hour, I did not reply to two suggestions made by speakers in the discussion. To the first, that Mr. March Phillipps was not a serious writer, and that his criticisms of Arab art need not be considered in my forthcoming book, my reply is that a book is a very different matter from a short paper, and that though I do not undertake to refrain from mentioning this critic's views—which I regard as noteworthy from the vigour with which they are expressed—my treatment of them would be different.

"As to the second suggestion, that the book should include the other schools of Muslim Art—Indian, Turkish, Moorish, Persian, and so on—this is impossible to follow, and completely at variance with the scope of the book as originally projected. The school of Egypt and Syria is as distinct from that of India or Spain as English Gothic is from French Gothic, perhaps more so. It is no more necessary to include all these various national styles in one volume than it would be to describe the *châteaux* on the Loire in a book on our Tudor manor-houses. And the work involved would be the work of a lifetime."

THE IMPROVEMENT OF LONDON: THE SLUMS OF INNER LONDON AND THE HOUSING PROBLEM.

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Mr. President, Ladies and Gentlemen,—Before proceeding to the subject of my Paper, I wish to express to our President my warm appreciation of his kindness in arranging this special evening, thus affording me the opportunity of bringing to your notice some housing and other problems which I hope may prove to be of special interest.

This Paper is an attempt to make some practical suggestions in regard to the urgent demand for extending the present business accommodation in the City; to the need of further communication between the north and south sides of the river; and more especially to deal with the housing problem as it affects manual labour. Of these subjects I consider the housing problem as the most important and the most insistent. But it must be approached not only in a practical manner, it must be approached in a spirit of humanity and "Fellowship." These present-day problems and any future developing of inner London must take into account the rapid development of electricity and the schemes now before us for centralising electric power.

It is possible to conceive in the future—many people think in the near future—that London atmosphere will be entirely free of smoke; electric power will be used for railways, river steamers, all factories, etc. Of course in New York many of the railways are worked under electricity for some miles from the city.

We have had a mass of literature during the last twenty-five or thirty years emanating from men who have made exhaustive and sympathetic enquiries into the conditions under which so large a proportion of Londoners have been doomed to merely exist, and this from no fault of their own. In any possible development of inner London the slums must be abolished. We have heard and been indignantly shocked for a time, and then taken refuge under the comforting assumption that the poor must always be with us.

Overcrowding existed before the War and was ignored, excepting by those who dwelt in the existing areas, but it has now increased to a degree that has given ground for general alarm. The great influx from the country into London, probably begun in the early years of last century, is of course the primary cause of the present state of congestion. Before the immigration at the beginning of last century it was possible for the citizen to have his own house. Such houses were often of two storeys, ground and first floors; when of three or more storeys, two families could be accommodated, though not really in decency. It is in these districts that overcrowding prevails to a degree disgraceful to the whole community. These districts from the very beginning were mean, sordid and depressing. They are now mostly foul slums, to be found in nearly all districts in London. Their grimness cannot be fully realised without visiting them. Many of the properties were laid out by landowners to produce the greatest return in ground rents. The streets are of the narrowest possible width and the houses of the smallest possible frontage. There are no open spaces (such as abound in the Bloomsbury area, etc.), this not being thought necessary for the class who were to live in these neighbourhoods. Of course, ground rents and unearned increments are vested interests and must be respected. But recently we have had reports from two Commissions—viz., the Miners' Commission report and that emanating from the Lambeth Conference. The report issued by the Miners' Commission, with all its ghastly details of the conditions of miners' homes, is fresh in the memory of the public—for a time the revelations in it "guiltily aroused the conscience of the nation." "The appalling conditions under which tens of thousands had lived for generations was at last realised." The Lambeth report insists on the idea of "fellowship." It is evident from the miners' report that the reverse of "fellowship" was the idea when (1) a high wall was built on the boundary of a ducal park to hide from view a miners' village, and (2) where it was shown that seven people were crowded into one bedroom. One would think that in the ducal mind his tenants were, not only of another class, but a "low caste" as known in India—outcasts whose touch was defilement.

Strive for and accomplish all that is possible for the better housing of the people, we still have a submerged tenth to consider. But I would ask whether a clean sweep of this "Augean stable" cannot be attempted. Must we always have the poor with us? We think it expedient to accept this saying as a Divine precept, with a shrug of relief. The report of "The Church and Industrial Problems" emanating from the Bishops' Conference held at Lambeth is a strong condemnation not only of the slums in London but as they exist all over the country. It draws serious attention to overcrowding and the consequent results in drunkenness, poverty, crime and unrest. It goes on to say: "It is a reproach to our Christian civilisation that we have tolerated, both in town and country, slums and in-

sanitary dwellings which have caused an appalling mortality among *little children* and been plague spots of disease and moral evil." We have allowed our industrial towns to become a mere wilderness of hideous streets—this is equally true of very many districts in London. The Report continues: "workers ought to have an adequate share in the control of the conditions under which they work." It should be added "and under which they are housed and live."

A careful study of this report and the pamphlets by Sir Charles Booth, Mr. W. L. Hitchins (Chairman of Cammell, Laird and Co.), who are much quoted in the Bishops' report, lead one to feel that reparation is due, that it must be admitted, and, in some form or other, must be fulfilled. When the present conditions of the home life of manual workers are rightly and fully realised, it is impossible to doubt that these to a large extent are a cause of the feeling of unrest existing in the working classes. As one writer puts it, speaking of village life, "They lived from hand to mouth." "They had done so all their lives and knew no security, the chronic state of the poor. Only to-day they are awaking to the unreasoned impropriety of that state, only to-day do they demand to rise above the level of the brute creation."

It was my intention to illustrate this Paper by means of slides, and I paid a visit to Lambeth with a photographer to what I thought the slummiest district. But a friendly policeman took me to Hatfield Place and Wooton Place—houses of one and two storeys. Hatfield, Wooton—names that recall pleasant memories; but the damnable irony of it when you thought of the names and looked upon the places. I went into two houses, the two-storeyed ones—the ground floor room 9 by 10 feet, staircase 2 and 3 feet wide, scullery 7 by 7 feet, one bedroom only—with five people sleeping in it in the one house and four in the other. I was received quite politely: they hoped I had come to arrange for pipes and floors and roofs to be repaired. In one lived a widow, who looked very careworn but was patient, scarcely cheerful. Evidently it had been washing morning as three strings of children's clothes hung from the ceiling. I confess I had not courage to investigate in detail the sanitary arrangements. Rent 8s. 1½d. per week. But why the 1½d.? It must have been added as a devilish attempt at humour. The widow's eldest child lost a leg in the war. In the adjoining house the husband is still fighting in Mesopotamia. The children looked well cared for; of course their little noses, on a cold day, required attention. I tell you, I was quite overcome with horror to find further evidence that people, by no fault of theirs, are doomed to exist worse than do pigs. Of course, much worse than do other domestic animals. I felt guilty.

The photographs taken turned out to be unsuitable for my purpose. To my consternation they looked almost picturesque. The griminess of the houses, the dirtier the better, gave quite a pleasant tone to the photographs. In a water-colour sketch the "tone" would have been more pleasing still. I have seen a colour sketch of a tramp—the greasiness of his rags came out quite well in "high light." Thank goodness, I couldn't smell the subject!

There was some talk a little while ago of a Committee to enquire why the people had fallen away from the Church. The conditions under which so many of the poor exist may be the "wayside" and the "stony places" upon which the seeds of the sower fell.

Unrest is no new phase of existence in any class of the community. It is probable there was unrest among the Egyptian people when Joseph made a "corner" in wheat and became the first profiteer that history records—this perhaps is going too far into the remote past. We may infer that it existed, in a greater or less degree, until it culminated towards the latter end of the fourteenth century by the rising of the people under the mad priest John Ball; this in great part was certainly due to the conditions under which the mass of the manual workers were forced to exist at that time. The rising to some extent was successful in alleviating the harsh conditions under which the poor existed at the period, but any further amelioration was brought to an end by the dagger of Walworth—a drastic and for the time an effectual means of stifling unrest. The Lambeth report, speaking of mean wildernesses of hideous streets, to be found in slums everywhere, says: "The way of remedy is hard to find, but our conscience cannot be easy until we have found it."

I wish at this point to comment on the housing schemes being carried out by the London County Council for the accommodation of a vast number of manual workers. These schemes appear to be developing very rapidly, and in a satisfactory manner, though they can only be considered a partial solution of this difficult housing problem. They form entirely new areas of population, but add in an alarming degree to an already overgrown town. For years the expansion of London has been considered by all with apprehension. In defence of this expansion it has been affirmed that there was no other way to meet the urgency of the case. It appears to have been taken for granted that expansion must be outwards—nevertheless it may be questioned whether outward expansion will adequately relieve the wants and desires of the workers and of the community as a whole. The consequence of continued expansion will mean that traffic by rail, tram and bus will be greatly increased. At the present time it is congested, night and morning, to an alarming extent; a scramble or rather a desperate fight is necessary to get even standing room, and physical exhaustion is the result. Doctors tell us that no better means could be devised for the spreading of epidemic diseases. Further to overcrowd passenger traffic will quite probably lead to a disastrous breakdown. I would ask whether in place of new residential centres it would not have been more desirable to create newindustrial centres on the outskirts. A beginning in this direction has been made in many places on the Great Western and other railways.

The tastes and preferences of the Londoner as compared with those of the country-born cannot be ignored. It is doubtful whether these have been sufficiently considered. There is no doubt that a very large proportion of Londoners would rather live in London than in the country or the suburbs. "The man who is tired of London is tired of life." There are tens of thousands who think as Dr. Johnson thought. "Live in the country?" cried a cockney. "Oh, give me the Clapham Road and the buses." There are a vast number of people whose occupation makes it necessary they should live near their work, such as newspaper employees, waiters, theatre people, and the great majority of men employed in the building trade. The localities in which the latter find work are constantly changing in every direction in and out of London. A workman living in the extreme north of London has often for considerable periods of time to journey across London to go to his work in the extreme south; this involves a journey of an hour and a half or more, night and morning, during most of which time he may have to stand. He is in some instances paid for the time engaged in this toilsome travelling, but of course that payment is indirectly made by the public. Therefore, if these workers could be provided with suitable homes inside London, it would tend to lessen the cost of production in many ways.

The creation of further residential centres round about London is fraught with many serious objections evident to all of us. The population is still increasing, and the consequent expansion of the town must be met in some form or the other; it is hoped to show how this can be attained to some considerable degree without increasing the present area of the metropolis.

The housing schemes now proceeding mostly leave untouched the hideous slums to which I have already referred. If, in the past, Governments or public bodies have given but scant attention to the crying evils of "slumdom," there have been, however, those who gravely studied the matter, who knew and were shocked and indignant that so great a part of the whole community should be compelled to exist under conditions so disgraceful to humanity. Peabody and others interested themselves, a mere handful among millions of their fellow citizens, and the "Peabody" dwellings were the outcome of their efforts. The public of that day gave a sigh of relief; here was someone willing to take up a burden and relieve them of all responsibility—not that the public thought for one moment that it was primarily responsible for such a state of affairs. The Peabody dwellings were followed by the L.C.C. industrial dwellings. Many of these, however, are far from being satisfactory except in teaching what to avoid; for example, when they are built in blocks, the space between them should be much greater, and in many instances the ground floor rooms have not nearly sufficient sky area. In all cases the general aspect is of the gloomiest character, depressing to a terrible degree when only passing them in a casual manner. To the worker reaching home it must be like giving up hope to enter. Of course these remarks do not apply to the more recent industrial flats.

It is, I think, for architects seriously to consider any remedy, even though it be a partial one, which will tend towards obliteration of some of our London slums. I may here state that the remaining portion of my Paper is an amplification of suggestions I have already published in the *Builder* in 1918, and in the *Daily Telegraph* of this year. I then suggested that an area of about 150 acres on the south side of the river should be acquired for the purpose of building workmen's and middle-class dwellings in the form of flats, that a large area immediately abutting on the river should be devoted to business premises and public buildings and gardens. This would, of course, involve the removal of the wharves fronting on the river, and the clearance of a large area chiefly composed of such slums as I have already described. There is no valid reason why these wharves could not be removed to other districts without detriment to their business. As I have said, many factories go to the extreme outskirts, many are now located on sites adjoined to railways, and villages are springing up round them. There should be control over the introduction of further factories into inner London. This area would comprise the main frontage extending from the London County Hall to the site of the proposed St. Paul's Bridge, with an embankment between these points.

There are those who decry any suggestion to improve the south side of the river, pleading that under some atmospheres it is picturesque. Perhaps this is so when it is looked at from the northern side, whence the foulness of it cannot be seen. There is no doubt that in future, whenever the opportunity arises and the surroundings are suitable, we must build upwards. The proposal put forward by Sir Martin Conway for an upward expansion of London is admirable; at the same time we must not attempt to emulate the New York skyscrapers. There is no valid reason why flats for all classes should not be built to a height of fifteen or even twenty storeys on the embankment which is suggested should be formed on the south side of the river.

The idea of housing on the flat system is no new one. According to the late Professor George Rawlinson there were very high residential buildings—the "pleasant houses" in Ezekiel—in that part of the city of Tyre which was built upon an island. The fortifications of this part of the city where they faced the mainland were over 150 feet in height, and it is supposed that these residences were even higher; they may have formed part of the fortifications. It seems probable that each of these buildings was inhabited by several families, in which case we may say that the flat system was in being 1000 years B.C.

The number of residential flats in London is increasing annually; at least this was the case before the War and probably will be again in the future. We all know how great is the demand for this class of residence, not-

withstanding that in very many instances some of the rooms receive light from internal areas only. Flats may generally be taken to be a height of six floors, the height being restricted by the conditions of the London Building Acts. If there were no such restrictions they could be built to a height of twenty or more storeys, the topmost storey being a more desirable residence than the lowest one. In some flats there is central heating; in all there is a great saving of labour and of worry in housekeeping. When properly planned they are as isolated as the ordinary street residence, and occupants of adjoining flats need meet only in the lifts.

Where there is a sufficient area on which to embark on a large building undertaking, within an outlook over the river, structures of an elevation of 150 to 200 feet would not, in my opinion, create an overpowering effect, especially as each block would require a certain amount of space around—at least 55 degrees of light to ground floor windows—thus ensuring that neither building would be overshadowed by its neighbour. It should be remembered that the Savoy Hotel, facing the Embankment, is 138 feet high. The Hotel Cecil is considerably higher. I may say that not a brick need be used in the construction of a block of flats such as I have described. This would mean, of course, a drastic revision of the Building Acts. As they now stand they are universally condemned as being altogether out of date.

The building upwards would provide a playing ground attached to each block and a partially covered playing area on the roofs. The roads of course would be planted and bordered by gardens—Utopian—yes, but Utopia was a "happy city"!

I remember hearing Gladstone affirm that Italians were the only people who built in a large and palatial manner; we see that this is true when we consider that the Pitti Palace, in Florence, though comprised of three storeys only, is 120 feet from pavement to cornice. It certainly does not give the impression of being abnormally high. We have not followed other nations in regard to the height of our churches and other public buildings; consequently, although not inferior in beauty, they sometimes lack the imposing quality which mere size so often gives.

But only the fringe of "slumdom" would be touched by the rebirth of Lambeth. There remain other wildernesses, and in these we may well consider the question of expanding London upwards. I venture to say it is worthy of grave consideration, and in such areas as Hoxton, for instance, would go far to solving the housing problem. Those who know the New York skyscrapers will admit that they look very fine from the river and even from the street—though there are strong objections to them in a town on account of obstruction of light and air. This does not occur if they are sufficiently isolated. I do not suggest, however, that skyscrapers of the New York type are suitable for London. I have just said that we are timid in our conception of high buildings; we do not, however, think the Victoria Tower too high, yet it is high enough for thirty storeys of flats.

In every large scheme of rebuilding the first obstacle is how to house the inhabitants during the process. This is the chief difficulty in the housing problem, and especially so in dealing with the slums. I would suggest that Army huts and other temporary Government buildings could be erected on open areas and converted into temporary homes for those families ejected from the houses to be destroyed on the area of each new tower of flats. There are many such open spaces which could be so used. For instance, portions of Victoria Park, Meath Gardens, London Fields, Well Street Common, Highbury Fields, and in the case of Lambeth, the Palace Gardens. Another manner of proceeding would be to build flats forthwith on such spaces as Meath Gardens, Well Street Common and a portion of Victoria Park. The loss of these open spaces could be compensated by new spaces formed by the demolition of condemned slums.

In order to allow me to speak with some little authority on residential flats, I thought it desirable to make plans of various groups. I thus found that each dwelling could be approached from a hall common to all, that each room could have direct and unobstructed light, and that for such things as slop pails, etc., which necessitate a space open to the air, a form of balcony might be made an agreeable architectural feature. Bachelor and spinster residences could be designed with suites, two or three rooms, or a dwelling of one room, very similar to those for students in Eton School. With the exception of increased dimensions these proposals, so far as accommodation is concerned, comply with the requirements of the Local Government Board. To those who are familiar with these requirements it will be obvious that they include all that is necessary for the needs of many middle-class people as well as those of the working class.

I sought the assistance of a Quantity Surveyor (who took out the quantities of one flat) and of a London contractor, to enable me to put before you the cost of buildings I have described. The result is as follows:

60 flats contained in a building
10 storeys £60,000
90 flats contained in a building
15 storeys 90,000
120 flats contained in a building
20 storeys 125,000

In positions where an architectural effect would be desirable, an additional 7½ per cent. should be added to the cost. It must be noted that in a similar building designed as flats for single men and single women, the rents accruing would be something like three times as much as for a family flat: the initial cost being the same in both cases.

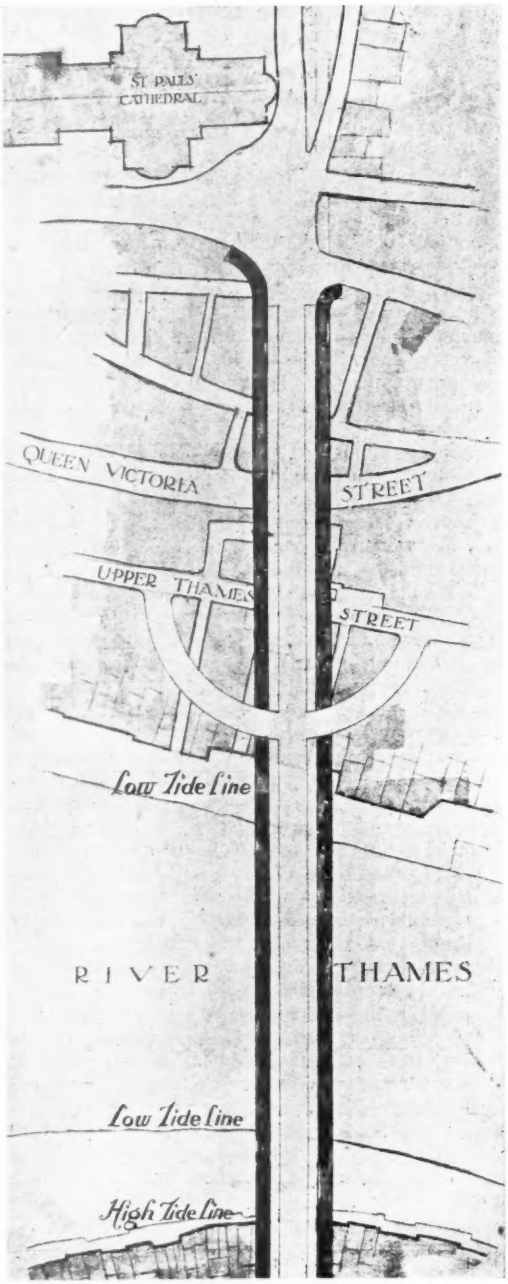
Of course strong exceptions will be taken to any method of fusion of the classes. It will be said that the manners, customs and sense of decency of the working classes is on a lower standard than that of other classes; it would be impossible to live under the

same roof or even in the same locality. But manners and customs change. They are on a higher standard now than pertained at the beginning of the nineteenth century. There is a tale told of the modern working woman who being congratulated on having a bath in her new house, "thanked God she had never had to use it." The peeress of a hundred or a hundred and twenty years ago might well have made the same reply. And decency is easily taught and learned. Compare the smoking carriages on the tubes with a third-class smoking carriage before their advent. Decency has never before been taught in such few and terse terms as "Do not spit."

As to locality, there must be no working people's localities in the future. No right feeling of fellowship can be encouraged if the social gulf is allowed to remain. Pray do not think I would suggest the planting of a workmen's club in such localities as Piccadilly, for instance. But, in coming happier times, even the clubman might not think them "untaught knaves, unmannerly, to bring a slovenly unhandsome corse betwixt the wind and his nobility."

In addition to the urgency of the housing question, there is very great need for further business accommodation in the heart of the City. I venture to suggest how this can be met to a large extent in a simple and practical manner. The building of a bridge starting from St. Paul's Churchyard has been in abeyance since 1914. It is now proposed to proceed with the scheme, and at a large increase of cost. The City authorities have, of course, obtained—no doubt at a heavy cost—a large amount of valuable property to form a necessary road from St. Paul's to the bank of the river, and more moderate outlay has been expended on property on the south side. My proposal is that the approaches on both sides should be formed into streets, as indicated on a plan now before you, that these streets should be continued across the river. They would be carried on arches similar to those, say, of Waterloo Bridge. I am assured by an eminent bridge engineer that my proposal would entail no engineering difficulties, either as regards the substructure or the extra width of bridge. The total width would be 150 feet, rather less than the railway bridge adjoining Blackfriars Bridge. There should be roads constructed, as shown on the plan, leading by easy gradients to the approach of the bridge. The buildings on either of the approaches would go to the full height allowed by the Building Act. This, of course, would mean about three extra storeys from the level of Queen Victoria Street to the new level. On the bridge portion of the scheme, a length of about 1,100 feet, the buildings could go to a height of three storeys, with the result that a very fine architectural effect could be attained. Of course, this would only be seen from the river, from the windows of adjacent buildings or from an aeroplane.

The completion of St. Paul's Bridge will, of course, give an immense area of property on the south side ripe for development and easy of access. The distance from St. Paul's Bridge to the end of Fenchurch Street is one mile, to Moorgate Street Station half a mile. A new centre of City activity on the south side



SUGGESTION FOR ST. PAUL'S BRIDGE.

would be reached by a street of continuous buildings ⅜ mile in length. On the other hand, the ordinary open bridge would mean a walk of nearly a quarter of a mile from business house to business house.

It will be allowed by every one who has considered the matter that there is a great need for more bridge communication between the north and the south of the river. It may be of interest to compare the bridge connection across the Seine with that across the Thames. From London Bridge to Chelsea Bridge, a distance of 3¾ miles, there are eight bridges only; in Paris in the same distance, and in the heart of the city, there are sixteen bridges, some of them only 300 yards apart. Paris is therefore one grand and beautiful city. London is gradually becoming beautiful on the north side of the river, but on the south side it is still little better than a collection of slums.

I am not versed in financial matters, but I may be allowed to give my views on the subject. With regard to the extra outlay involved in making the bridge 60 ft. wider than now contemplated, and including the superstructures of three floors, it may be put at a million or a million and a half. From reliable information I am assured that a rental of 15s. per foot super for the ground floor, and 7s. 6d. for the two upper floors could be obtained. On these values the total rent of £120,000 per annum would mean nearly 10 per cent. interest on an outlay of 1½ millions to the Corporation, a "potentiality of becoming rich beyond the dreams of avarice." With regard to the bridges and the Embankment, the cost would presumably be borne jointly by the City Corporation and the London County Council. The present Embankment from Westminster Bridge to Blackfriars Bridge was due to the extinct Metropolitan Board of Works. If the Government can be satisfied that a housing and building scheme, on the 150 acres, would be of great public utility, it might be possible to obtain an Act of Parliament (similar in its provisions to the Railway Acts) giving to a properly constituted body or a syndicate powers similar to those given to the railways, including a right to purchase by valuation.

The property is at present of relatively small value; compared with City property it is as 1 to 10, or even 1 to 15. My opinion that a properly constituted building scheme could be made to pay is strengthened by the opinion of an eminent property surveyor. In developing any such scheme, a large proportion of the area would be for extension of business and various other premises—perhaps for public buildings. The Act might provide that certain areas be reserved to the Government or municipal authorities for the building of flats. A further project is the co-operation of Capital and Labour. This has already been successfully tried in the North of England on a small scale, under what conditions I am unable to say. Would it not be possible to effect co-operation in London, especially in regard to working class dwellings? Given a truce of five years, Labour finding its capital by, say, a weekly levy of one shilling a week from members of the Building Unions and the allied trades—steel workers, brickmakers, cement operatives and others—an enormous weekly capital would result. It would then be Capital and Labour Capital.

No collaboration between Capital and Labour is possible so long as that pernicious policy of "ca' canny" is prevalent. This is a fallacy even more detrimental to the morale of the worker than to the prosperity of the employer and the country. Happily, some sections of labour—the miners—appear to be awakening to this all-important fact.

I here venture to give quotations from Victor Hugo which appear to bear on the subject: "To kill wealth is not to distribute it. The two problems must be solved together to be well solved." "England creates wealth wonderfully and distributes it badly . . . this leads to monstrous misery." It is only right to say that these words were written before the advent of trade unions, but they have the same value to-day.

I am going to inflict upon you one more suggestion for the improvement of London, and that is that a Barrage should be formed in the river. It might conceivably form part of the proposed St. Paul's Bridge. A Barrage, below London Bridge, was formulated and discussed in a paper read at the Institution of Civil Enigneers some few years since. The idea, however, did not fructify. The object of a Barrage is to keep the river above the bridge more equable in the rise and fall of the tide, thus adding greatly to its beauty. This idea was, however, found to be impracticable. In 1918 I made a suggestion that the proposed St. Paul's Bridge could be so constructed as to form a barrage. This, of course, would mean a series of locks and weirs. The rise and fall of the river would be 9 feet instead of 19 feet as at present. Perhaps this rise and fall could be utilised for the generation of electric power. Old London Bridge, with its enormous piers and small arches, acted as a barrage to such an extent that only practised boatmen could "shoot the rapids" rushing through the arches. The rise and fall of the river was so reduced that Pepys could enjoy a pair of oars taking him from the city to Westminster without much thought of the state of the tide.

I fully realize that the subjects and projects of this Paper have continually been brought to the notice of the public, that I am merely reiterating views and opinions of many individuals and of public bodies; but, often as they are brought forward, they soon lose interest and are forgotten. It cannot be a mere, or a too vivid, imagination to foresee a London resurgent, a city of incomparable beauty and dignity; in its midst a river once more worthy to be called the "Silver Thames," bordered on both sides with embankments and stately buildings, a noble and placid highway unsurpassed. It is said the world is for the young, that old men dream dreams—let our young men see visions.

DISCUSSION OF MR. COLLCUTT'S PAPER.

The President, Mr. JOHN W. SIMPSON, in the Chair.

Mr. RAYMOND UNWIN [*F.*], in proposing a vote of thanks to Mr. Collcutt, said that the Paper contained many suggestions which were useful indications of a line along which good might come. Mr. Collcutt had suggested the opening up of the southern side of London. Every one would agree that there was a good field there for the opening up of large areas which had not contributed the full value that they might to the convenience of the life of London. He had spoken, too, about the necessity for more open spaces, and of the importance of securing adequate light and sunshine for the dwellings of the people. At first sight he felt less inclined to follow Mr. Collcutt with any enthusiasm when he spoke of London expanding upwards. We were not yet in a position to form any final opinion on the subject. There was much to enquire into. Those who had studied the housing question in New York, Philadelphia, Chicago, Berlin and other German cities, envied London because it had not adopted the high tenement building as the basis of its housing. There were many considerations. First, dealing with the building itself, Mr. Collcutt had spoken of the importance of light—one might add also, of sunlight. In this country the sun only rose 15° in the winter. It followed, therefore, that for healthy housing purposes, for every storey higher in the building one sterilised a much larger area of ground on the shadow side than was gained by the extra storey. It also followed that dwellings could only be built healthily one dwelling deep, and even then only if there were not a north side to the building. Otherwise in this country the living rooms on the north side would get no sun throughout three parts of the year. It was difficult to build high blocks of buildings satisfactorily when they were to be only one or two rooms deep. A question, too, of vast importance was the evil of tenement dwellings for child life. There was a great deal to be said for buildings higher than we had at present, for special purposes—we had not made full use of height in this country. But as a general means of solving the housing problem, these high buildings would be found to be much more expensive in land. Again, the number of people got on the land healthily was only slightly increased because of the large area that must be left between and around the buildings in proportion to the height if they were not to be overshadowed. The question of lifts for artisans' dwellings, of the child use of lifts, must also be worked out. It would be found that nearly all the block dwellings in London cost more for less accommodation and inferior opportunities compared with the cottage dwellings which were being built in the country. It was traffic congestion which was making people think that London must be extended upwards. His opinion was that traffic congestion was far worse in the cities which had built upwards, and that we should find, on careful survey, that the people who lived in the town used the traffic facilities more than did people who lived outside. The statistics of big towns, the growth of population in London and the growth of traffic, showed this. The number of journeys per head of the population and the total number of journeys taken increase not only faster than the population, but faster than the square of the increase of population. Take, for instance, a man living in a near London suburb, the whole of his family, including his servants, would be on the buses and in the tubes all day long, going by tube to shop, by tube to school, by tube to play cricket or football or hockey. But if he lived outside, at Hatfield, say, then only one member of the family would come to town daily and go back again. If proper and rapid transit were provided from the business centre to the centres of living, further out, traffic facilities required per million people would be considerably less than if the millions were crowded, as in London, round the centre. These matters required to be looked into very carefully, and London should think very long before it gave up that heritage of single-family dwelling-houses which was the envy of housing reformers throughout the rest of the world. There were few big cities numbering their population in millions which did not envy us having kept to the family cottage dwelling as the mainstay of the housing of our great population. The development of London was one of the most difficult problems that had ever faced a people. Architects and surveyors, as advisers to the great owners of London, had their share of responsibility. He hoped the Institute would have many meetings of this character at which those who, like Mr. Collcutt, had great experience could give them the benefit of it with the view of solving this problem. They should encourage the development of the city; and the next step would be to define zones for London. The best way to reform traffic congestion was to localise the life. People should live near their work, and to bring this about we must disentangle the confusion into which London had drifted. Factories must be built, and dwelling houses and recreative opportunities provided near them; so that people who lived in Hampstead or Hatfield or such-like places might be near their work and near everything they wanted. There was only one thing which was still centralising with great force in London, viz. commerce. We had not yet reached the limits of centralisation in commercial undertakings. But the majority of people did not come into London for commerce. Every one who lived in London employed a washerwoman, a milkman, and a host of other people for

their needs, and they all of them used tram, omnibus, tube, and other means of transport. If it were examined into, it would be seen that the localisation of life in centres outside London would lead to an easing, not to an increase, of the traffic difficulty. But there must be some reorganisation that we may have greater and quicker transport facilities from point to point.

Mr. JOHN SLATER [*F.*] said that the Institute was to be heartily congratulated on the fact that their old friend and Past President, Mr. Collcutt, had brought before them this interesting Paper, which bore evidence of all that acuteness of intellect which had distinguished him throughout his long career. The subject was of the greatest interest. How greatly London was overcrowded in many districts was known to all of them; and it was a curious fact that the Regulations of the Public Health Act, which had been framed to improve matters, had added to this overcrowding. In the estate for which he was responsible there were numerous dwellings with basements that were far healthier to live in than many of the rooms and houses people had to occupy. The Public Health Act regulation that no basement the ceiling of which was not a certain number of feet above the road was to be inhabited, had conduced to overcrowding, because it took no account of the area in front of the rooms. The basement rooms he had in view were quite healthy and well adapted for the housing of single families. He agreed with Mr. Unwin as to the disadvantage of high buildings for London. The question was an extremely difficult one. Owing to the large open spaces necessary between the buildings no more people could be accommodated than was now the case, and they could not get over the fact that although a high building might face the river and be quite unobjectionable, there would be a high back to that building, and the shadow cast on buildings in the rear would be very disagreeable and detrimental to the property. Mr. Collcutt's idea of having buildings on the bridges across the Thames, was a very happy one; the cost of the increased width of the bridge would be more than compensated for by the rents of the buildings on the bridge.

Mr. WM. WOODWARD [*F.*] said that for many years past he had devoted considerable time to an endeavour to effect improvements in London, in the hope of getting the Government to make some grant towards public improvements such as was done in France, where millions of money were given for such purposes as compared with our thousands. When he was a member of the Westminster City Council, they endeavoured to get a better opening to the Mall. The London County Council gave £33,000, and the Westminster City Council gave £33,000, but it was a matter of the greatest difficulty to get anything out of the Government. He agreed with Mr. Slater that the height of the building should have some relation to its position. They might have a building 200 feet in height facing the river Thames, but such a building must overshadow the buildings at its rear. Therefore to get adequate light and air it would be necessary to form a street at the back of the high buildings, and this, in the City of London, would involve such an expense that it was hopeless to expect it to materialise. Every one was complaining of overcrowding, yet in some districts—in the Kennington Road, for instance—there were rows and rows of houses empty, though they could easily have been converted into dwellings for those that needed them. Who was to blame? Another point: why should the authorities of London, particularly the great landowners, clear sites, as they do, years before there was any probability of their being built upon? Take Lancaster Place, for instance. The Duchy of Lancaster had cleared all the dwellings opposite Somerset House; had turned out people who had offices there, and who now had the greatest difficulty to find offices anywhere. The Duchy of Lancaster had not the wisdom to wait until the sites were ready to build upon before they turned the people out of the houses. The height of houses depended on the height of the storeys. He remembered the Pitti Palace, at Florence, but was surprised to hear that each storey was 40 feet in height. With regard to slums, it was impossible to effect a clearance of these until provision was made for the people turned out. The Ministry of Health was created to supply houses in order that the slums might be cleared. But utter failure was the result. And a failure it would continue to be. The Ministry should be dismissed, and we should get back to private enterprise, which was the basis of English life. It had been suggested that huts should be used as temporary dwellings. In Regent's Park, in St. James's Park, in Battersea Park, and on the Thames Embankment there were many hundreds of huts, each of which could be made into a temporary home for a working class or a middle class family. His own opinion was that the difficulties we were now experiencing could be traced to trade unionism. Until the wings of trade unionism were closely clipped, knowing, as he did, the shocking waste of time it was responsible for, not only on buildings, but particularly on work in the streets, we should never get any real improvement, and we should never get the vast numbers of houses that were required for the working classes.

Mr. GEORGE HUBBARD, F.S.A. [*F.*] said that, looking at the question from the national health point of view, if the result of slum residence was to produce unhealthy children, obviously it was economically bad for this country. On that ground alone the slums should be cleared away. If the Government scheme failed how were the needed new houses to be built? An example which was under his notice at the present time was a fairly large area of cottage property, seven acres of dilapidated cottages. Looked at from the financial point of view, these cottages were let at weekly rentals, but the rates and taxes came to 16s. in the £. The owners, in addition to paying this, had to pay 6s. in the £ income tax. Consequently they were out of pocket to the extent of 2s. for every £1 of rent they received; and there were insurance and repairs to pay

for. There was no temptation for anybody to become an owner of cottages or to speculate in them. Mr. Woodward had touched the vital point when he said that private enterprise must come to the rescue; but was this likely in view of the above instance? What had been the effect in the past, when the Peabody Buildings were started, and the Sutton Trust, and the L.C.C. buildings? They were enterprises in which a limit was put on the interest to shareholders of from 2½ per cent. to 5 per cent. They did a certain amount of good work, but they were not in a position to cope with the whole difficulty. The net result was that these schemes stopped private enterprise; the speculative builder, whose business it would be to tackle such a problem, was discouraged, for he did not know when he might find himself in competition with L.C.C. or Peabody Buildings. These enterprises were started with the best intentions on the part of the semi-philanthropic societies, but they were fatal to private enterprise. The next bad shock for private enterprise was in Mr. Lloyd George's Finance Act, by which its promoter hoped that land would become more popular by putting a tax on it. The consequence was that through semi-philanthropic enterprises and bad legislation by the Government, we were faced by a problem which seems to be insuperable and insoluble. Our consciences could not be really at ease until a solution had been found, but how it was to be found he had not the remotest idea if the Government scheme failed.

Mr. EDWARD P. WARREN, F.S.A. [*F.*] said that he concurred with all that had been said against the introduction of high buildings in London. Except for the kind of site Mr. Collcutt mentioned, on the river, we had no streets wide enough to take high buildings. With the exception of Portland Place, we hardly possessed a wide street in London. If we were to have high buildings, even on the scale of Portland Place, we should reduce the street to a lane. Victoria Street, Westminster, if it had buildings of an average height of 40 feet, would be a tolerable street, but it was now a sunless, dismal, narrow-looking lane because of the height of its buildings. The sun in London was always a friend, hardly ever an enemy; there was not a fortnight in the year when we could regard sunshine as formidable in London; and already people who lived, as he did, in a fairly old-established quarter, had high buildings of one kind and another rising, cutting off sunshine from one window after another. His study, looking north by west, used to get the late afternoon sun pleasantly from the middle of April to the middle of September, and in the evenings too, but now it was a sunless room because of a high building. If that kind of thing was to go on broadcast in London, it would render it more and more unhealthy, more and more physically and morally dismal. As the Italians say, "Dove non va il sole va il medico," where the sun doesn't go the doctor does. As to how it was possible to deal with the awful problems ahead of us, he did not see a solution. But we had been facing so many insoluble problems of late that we must keep our courage tight in both hands, do the best we could, and as intelligently as we could, and hope for the future. It was always a pleasure to meet and talk to Mr. Collcutt, and a still greater pleasure and benefit to be talked to by him.

Major H. C. CORLETTE, O.B.E., R.B.C. [*F.*] said that it seemed to him that we were running away from some of the difficulties presented by London and its condition in that we tried too much to cure the evils we had round us, rather than to prevent the growth of London. Last year there was an important debate in the House of Commons on devolution. If anything of that sort were to come into being, it might do a great deal to prevent this growth. There was another Bill now under consideration which affected the agricultural question; and a measure of that sort, if it did what it was intended to do, should have the effect of keeping the population more in the agricultural districts, and that, again, would prevent the growth of London in the future.

Mr. FRANCIS HOOPER [*F.*] said that Mr. Collcutt had shown very wide reading by alluding to reports of two Commissions which might be said to form the extremes of our social system. The great need of the moment was that they should co-operate for the benefit of the whole. The influence of the Ecclesiastical Commissioners had been very great in the past, and their motives were, no doubt, admirable. Yet it was to their assistance during the last thirty or forty years that we owed row upon row and tier upon tier of dreary barrack-like buildings which had a most depressing effect upon the surroundings and were very detrimental to the neighbourhood in which they were placed. He had been reading lately "An English Gentleman's House," a book published when he was a boy, and had been much impressed by the progress that had taken place in our ideas of what an English gentleman's Home should be. Turning over its illustrations he could pity some who had had to occupy that house. Mr. Collcutt's remarks as to baths showed how the habits of the people had changed. This question of solving the problem presented by the condition of the masses was one which it should be a privilege to face. Seeing the way the servants used to be housed in many of our large houses it could scarcely be said they were treated suitably. There were, however, institutions in the country at the present day which architects could rejoice in. Men who could conceive and carry into effect a Bournville or a Port Sunlight, for instance, deserved their fullest appreciation and reverence. Mr. Collcutt had mentioned a pathetic case of a landowner who built a high wall round his estate to shut out from view a contiguous mining village because it annoyed him; he (the speaker) had seen an embankment put up for the like purpose, and had lived long enough to see the perpetrator suffer for it. A man contemplating the purchase of a property naturally had to consider the possibility of adjoining property being so built upon as to injure the property he was proposing to buy. He would not object to hav-

ing a decent building in his prospect. It was only a bad building that would spoil the landscape. It was, however, the fact that people were nervous about what was going to be put up because their risks were so great. When the public felt they could trust architects there would be less difficulty in finding village settlements not, as in the past, eyesores, but places which it was really a pleasure to see.

THE PRESIDENT said he should like to add his own personal and sincere compliments to Mr. Collcutt upon his Paper. He had rarely heard one more interesting and compelling. (Hear, hear.) Its construction reminded him of how constantly it was found that when an architect took the trouble to write a Paper how extremely well he put it together. He had been struck with the construction of Mr. Collcutt's Paper; it was built up almost like a well-constructed building. He opened, almost as a popular novelist might open, with a touching sketch of the lamentable condition of the submerged tenth, and the infantile mortality which resulted from it; and he followed with a lofty and courageous hope for the abolition of those conditions, and the substitution of a cheerful confidence for the present dull despair. He then developed his subject by pointing out the prevailing congestion, and was somewhat depressing in his references to the transport difficulties. Then he brightened into a livelier vein, and discussed, with that authority which he is able to discuss, the practical remedy for these evils. He touched very skilfully and delicately on the question of higher buildings. The Institute had had this matter under consideration for some time, and it might not be undesirable under certain conditions to urge the County Council to exercise the discretionary power which it possessed under the Building Act and permit higher buildings. But he was rather struck by the remarks of some who had debated this point. They seemed to have rather lost sight of Vitruvius, for they spoke of those buildings as if they were on the southern side of a street running east and west, and were therefore going to cast into shadow all the buildings which faced them. Vitruvius pointed out that roads and streets must be planned according to their aspect. High buildings in a street running east and west, such as Victoria Street, Westminster—which, as one speaker said, was one of the most depressing and dismal streets in the world—presented a different problem from that of, say, Portland Place, which ran north and south, and where higher buildings might not convert it into a lane. There was the question of architectural amenities as well as hygiene. With regard to the desirability of extending streets across the river bridges, in the old days when London was a small congested area within fortifications, and even later when traces of the fortifications were to be seen in the narrow slum-like streets which were gradually being opened up, it was of the greatest importance to keep the river as open as possible, because that was the great airway and ventilator of London. But, with better conditions, he could see no objection to the prolongation of the streets across the river. The bridges in Paris which spanned the Seine were shorter than ours, but there were more of them, and there was no doubt they served to connect up the north and south sides of the river with very satisfactory results. Being a narrower river, too, it would be more important to keep it open. But in the case of the Thames, the open wind-swept roadways of Waterloo and Westminster bridges constituted a most effective barrier to human transit from north to south, and *vice versa*. If those open bleak roadways could be converted into streets, the interest of the streets would be continued from one side of the river to the other, and people could immediately, so to speak, clasp hands across the stream. The question of the congestion of traffic was an interesting subject and one which could lend itself to a long discussion. Roughly speaking, he took the argument to be that if everybody lived in London, everybody wanted to go out of it, and therefore trams, 'buses, tubes and so on were very crowded. On the other hand, it was a fact, as Mr. Unwin pointed out, that commercialism had by no means reached its highest point in London; it was still there and was developing, and was likely to increase for some time to come. There would therefore always be a central attraction, and perhaps Mr. Unwin would remember that it was not only one member of the family who came up by the 8.30 in the morning. A good many members of the family did this, and some of them held season tickets.

The vote of thanks was accorded by the meeting with loud and long-continued applause, which was renewed when Mr. Collcutt rose to reply.

Mr. COLLCUTT, after expressing his acknowledgments, said that he fully agreed with what Mr. Raymond Unwin had pronounced as to the absolute necessity that ample light and air and aspect should be considered as of vital importance. He contended that the scheme he brought forward, of isolated blocks of flats, etc., 15 or even more storeys in height could be so planned as to give a sky area of at least 55 per cent. to the windows of the ground floor flats. This amount of sky area is not enjoyed in most streets in the London area. Portland Placemay be an exception. Of course the object of his Paper was to suggest how the slum areas could be converted into districts of real beauty, with every advantage that only the most favoured part of London now enjoys, and that a much larger population could be housed without extending the outskirts of London, as is now being done, by the erection of vast numbers of two-storeyed cottages. However, his Paper had been put before them in the hope that it might lead to some inquiry in regard to the future of the mean and sordid districts now existing.

ARCHITECTURAL EDUCATION.

Papers read at the Franco-British Conference of Architects held at Paris, 12th-13th November, 1920.

V. THE STUDY OF OLD BUILDINGS.

By Arthur Keen, Hon. Secretary R.I.B.A.

Among all the methods of training an architect for the practice of his calling, none was advocated by the men of the past generation with more earnestness and persistence than the study of old buildings by measuring and drawing them to scale and by sketching them in perspective. Study by this means is fascinating in itself, and it was adopted with such enthusiasm that nearly all the notable old buildings in our country have been drawn over and over again with the utmost faithfulness, and often with most beautiful draughtsmanship. The idea has been, of course, that in making a complete reproduction of a building on paper every feature of its construction, arrangement, and decoration is ascertained, noted and remembered. In this way buildings have been delineated so completely that as archæological records the drawings leave nothing to be asked for. Even the accidents of building, the peculiarities arising out of inaccurate work or the re-using of old materials, have been faithfully reproduced, and nothing from the pattern of the floor tiling to the jointing of the leadwork on the roof omitted. In very many respects the method justified itself by its results, and the success of the Gothic Revival in England is in great measure due to it. Students obtained such intimate knowledge of the methods of the ancient builders, of the way in which walls, windows, roofs and arches were formed, and the minutest details of tracery and moulded stone or wood were handled, that they applied their knowledge to the problems of modern building with confidence and success, and often with most beautiful results. Whatever may be thought of the ethics of reviving in modern times and by modern methods a system that was so intimately allied to the life, thought, social conditions, and methods of workmanship of the mediæval times, there can surely be no question of the intrinsic beauty of the resulting buildings—such buildings as the Houses of Parliament at Westminster, St. Agnes' Church at Kensington, Bodley's great church at Pendlebury, the modern work of many of the Oxford and Cambridge colleges, and other buildings throughout the length and breadth of the land.

With these results before us we have to consider very seriously whether this method of study is still to be advocated, how far it is to be trusted, and how it can be used to even better purpose than before. It is essentially the method upon which the Gothic Revival flourished; it led to the production of many remarkable books, including the most remarkable of all, the *Dictionnaire* and other books of M. Viollet-le-Duc; and it certainly was the method followed by the men who produced architectural work of outstanding power, beauty and interest. On the other hand, we have to remember that the great men of the Gothic Revival, Pugin, Butterfield, Street, Bodley, and the rest, were men of genius, and in the hands of a genius any method of study produces good results. The general average of attainment was, we must admit, rather poor, and one knows of only too many cases of architects whose study of old work was of the most exhaustive kind and yet their own original work was merely commonplace.

We have transferred our affection in the present day from Gothic work to Classic, but the method of study is equally applicable to both. Are we to trust to it implicitly, are we to abandon it, or are we to use it within the limitations that we think fit to impose? It appears to me that there is this essential difference to be borne in mind—that far more than in the case of the works of Greece or Rome or of the Italy of the Renaissance the architecture of the mediæval time was the logical outcome of particular methods of construction, of the limitations imposed by particular materials used and applied or accepted by men in whom artistic expression was an instinct, almost an unconscious tradition. The proportions and composition and ornaments of a Gothic building are constructional in their origin; in the Classic example they are the considered effort of one who seeks by conscious arrangement to produce effects that he values—effects of light and shadow, of concentration and contrast, of noble mass and beautiful outline, of subtle proportion, of breadth and dignity, richness, power, all the qualities by which stone and earthenware, metal and wood, may be shaped and disposed so as to convey to the spectator the feeling, the mental attitude and the power of the artist. It is therefore clear that if the study of old buildings by means of measurement and drawing is to have its full value for the student it must be accompanied by close and critical analysis. The mere record of the external facts may be useful for reference, but for the purpose of effective study it is necessary to understand how the design has been produced and upon what factors its success depends. I suggest, therefore, that writing should be used to supplement drawing, and the student should regard as more important even than his drawings a carefully reasoned statement or report on the building, setting out the impressions that he receives from it, its arrangement in relation to its site and surroundings, the features of its plan, especially the disposition of the blocks that form the elements in its external composition, the proportions and treatment of its rooms or halls, the size and treatment of its courtyards, the size, spacing and grouping of windows, the methods of construction and roofing adopted and their influence on the design, the skyline, the qualities upon which the designer has depended, whether of boldness, richness, refinement, grouping or proportion, and how these qualities are achieved and maintained; the relation of wall space to openings, of light to shade, of height to width; the use of colour, the treatment of metal work and sculpture—in short, all the things which must enter into

the consideration of design in buildings that he will be called upon to produce.

In the preparation of drawings these things may be accepted as facts without much appreciation of their origin or intention, but it is not possible to discuss and describe them in writing without due analysis and research—analysis which must constitute them part of the mental outfit of the student, and must give him a clear perception of the lines upon which successful design must proceed. I think it will be agreed by those who have tested it that such critical analysis or description as I suggest has the effect of fixing the facts on the mind and memory of the student in the clearest and most lasting way. Drawing buildings in perspective is good, measuring and plotting them is better, but if both methods are used in conjunction with a carefully written description, very little more is possible. The details of architecture must be studied by drawing, but I submit that, as regards all the important factors that enter into the design of a building, a written record is the best means both for study and for impressing a subject on the memory of a student.

By the study of old work the student establishes for himself a standard of taste, he acquires a right sense of scale and proportion, he learns the proper uses of material and the limitations that material imposes on design, and, perhaps more important than all, is led to realise what factors and what qualities enter into the design of successful architecture.

CORRESPONDENCE.

Architecture and the Public.

29 *Dec.*, 1920.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—An interesting movement has been initiated in Manchester with the double object of stimulating public interest in good building and developing a greater appreciation of architecture in the builders and workmen. To the Manchester Branch of the Institute of Builders must be given the credit of having taken a lead which, it is hoped, will be followed by others. They have obtained the hearty co-operation of the Manchester University and the Manchester Society of Architects, with the result that the following public lectures have been arranged to be delivered at the University:

17*th January.*—"Is Architecture worth while?" by Mr. Paul Waterhouse, F.S.A.

27*th January.*—"Imperial Building: What we can learn from Rome," by Mr. W. G. Newton, M.C.

17*th February.*—"Westminster Abbey and its Buildings," by Professor W. R. Lethaby.

The general public and all those connected with the building industry are invited to attend and no charge will be made for admission.

Mr. H. Matthews, J.P., President, and Mr. John Macfarlane, Vice-President of the Manchester Branch of the Institute of Builders; Prof. A. C. Dickie, Director of the School of Architecture, Manchester University, and Mr. Francis Jones, Hon. Secretary of the Manchester Society of Architects, and myself have made the arrangements for this short course. It is hoped that this may be only a beginning, and that similar lectures will be held annually.

Apart from these public lectures the Institute of Builders have arranged the following syllabus for their own members:

1*st December.*—Visit to the Tile and Pottery Works of Messrs. Pilkington at Clifton Junction.

13*th December.*—Lecture, "The Influence of Building Material upon Architectural Style," by Professor A. C. Dickie.

— *January.*—Lecture by Mr. Frank Woods.

7*th February.*—Lecture, "The Training of the Builders' Apprentice," by Mr. D. T. John, Ministry of Labour.

28*th February.*—Lecture, "The Buildings of Sir Edwin Lutyens, R.A.," by Mr. Hubert Worthington.

14*th March.*—Lecture, "The Economics of Production," by Mr. S. Turner, of Rochdale.

The Builders' Institute also propose to visit buildings of architectural and historic interest. It is much to be hoped that this admirable example will be followed throughout the country, and that architectural bodies will do all in their power to co-operate.

The efforts of architects themselves cannot produce a great epoch in building without the necessary demand on the part of the public and intelligent execution on the part of the builders and the workmen. In this small beginning we may see the germ of what was recently described as more important than a school of architecture, a school for clients, and, what is just as important, a demand on behalf of the builders themselves for a higher understanding of the meaning and significance of *true* architecture.—Yours, etc.,

HUBERT WORTHINGTON [*A.*].

The Library.

11, *New Court, Lincoln's Inn*, 22 *Nov.*, 1920.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—I have always been interested in the important question of the housing and safe custody of the Institute's magnificent Library and collections, and I would emphatically urge the Council to give serious consideration to providing further accommodation and introducing simple, economical and efficient safeguards against fire. That further accommodation can be provided for several thousand volumes in the three rooms goes without saying, and I could readily suggest a means to effect this, but there are others more expert and more experienced than myself whom I suggest should be consulted.

With regard to the protection against fire, speaking quite off-hand I would suggest (1) that the book-cases (at least those with valuable contents) be reglazed with fire-resisting glass; (2) that automatic sprinklers be installed in the three rooms (and in the rooms below if the floors are of open timber construction); and (3) that all intercommunicating doorways be fitted on both sides with a water curtain.

By these means, at an expenditure of a few hundred pounds, little anxiety need be felt in future. Should the objection be raised that the Institute cannot afford this expenditure, I would point out that a library which is worth to the Institute, shall we say, £10,000, is presumably insured for this amount. On this basis, therefore, I feel confident that the Insurance Company, were the library fitted with the devices suggested, would give an annual rebate so substantial that, capitalised, it would represent more than the cost of the installation.

I would like to add my tribute to the Librarian's valuable and interesting Paper, which I trust will have the effect of enlivening the somewhat dormant interest of members in the contents of their Library. Only those who make frequent use of it can understand and appreciate the educational and humanizing occupation of browsing among its volumes with its presiding genius at one's elbow as an informative guide and mentor.—Yours, etc., PERCIVAL M. FRASER [*F.*].

Westminster Abbey.

20th December, 1920.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—By an unfortunate clerical error the date under the drawing of Mr. Pearson's restoration in my sheet of illustrations published in to-day's issue of the JOURNAL is "1902." The drawing was exhibited in the Academy of 1892, and published in the *Building News* of the 9th December of that year. The work, as is well known, was actually completed in 1891.—Yours, etc., S. HURST SEAGER [*F.*].

THE LIBRARY.

Notes by Members of the Literature Committee on Recent Purchases.

[*These notes are published without prejudice to a further and more detailed criticism.*]

I BIBIENA ARCHITETTI TEATRALI. 1625-1780. 4to. Milan: Alfieri & Lacroix. 1915. 24s. net.

The collection of drawings in the Library includes some interesting examples from the hands of Francesco and Giuseppe Bibiena, two of those eight members of the Galli family who supported the claim of Bologna to her admitted position as home of the leading scenographic artists during the seventeenth and eighteenth centuries. The extraordinary facility of these designers in executing the "prospettive" or drawings of imaginary buildings and their bold inventiveness in their compositions are further illustrated in this volume. Most of the plates are from the original drawings in private collections, though several are from the engraved plates of Giuseppe's *Architetture e Prospettive* of 1740. The portfolio of upwards of one hundred of these designs is accompanied by a useful appreciation of the work of the Bibiena or Galli family, of whom no fewer than six members are represented here.

DRAINAGE AND SANITATION. For the use of Architects, Surveyors, Engineers, Health Officers, Sanitary Inspectors, and for Candidates preparing for the Examinations of Professional Institutions. By E. H. Blake. 2nd ed., with 379 illustrations specially drawn by the author. 8vo. Lond. 15s. net. [B. T. Batsford, Ltd., 94, High Holborn.]

This is a comprehensive survey of all branches of sanitation in relation to buildings; and valuable information is included on such matters as ventilation, heating, lighting and water supply, as well as numerous well-illustrated examples of sanitary fittings and the details of sewage disposal, etc. The last chapter contains legal notes.

THE MUNICIPAL YEAR-BOOK OF THE UNITED KINGDOM FOR 1920-1921. Roy. 8vo. Lond. 1920. 21s. net. The Municipal Journal, Ltd., Sardinia House, Sardinia Street, W.C.2.

A work which the staff preparing the Civic Survey found of great utility in supplying them with information on all activities under civic or municipal control. It gives full particulars as to the *personnel* of local governing bodies not only in London but throughout England, and of the matters for which they are responsible, such as Water Supply, Electric Supply, Hospitals, Libraries, etc.

A TREATISE ON REINFORCED CONCRETE. By W. Noble Twelvetrees, M.I.Mech.E. Including the New Standard Notation of the Concrete Institute. With a Foreword by E. Fiander Etchells, A.M.Inst.C.E., 8vo. Lond. 1920. 21s. net. [Sir Isaac Pitman & Sons, Ltd., Parker Street, Kingsway.]

This is a small but valuable book of about 250 pages, written by a first rate authority on the subject. It contains a large number of useful formulæ, but at the same time it avoids elaborate mathematics.

SPONS' ARCHITECTS AND BUILDERS' POCKET PRICE BOOK, 1921. Edited by Clyde Young 47th ed. 6s. net. [E. and F. N. Spon, 57 Haymarket.]

A TEXT-BOOK ON SURVEYING AND LEVELLING. By H. Threlfall, M.Sc.Tech., Engineering Lecturer in the College of Technology, Manchester. 1920. 21s. net. [Charles Griffin and Co., Ltd., Exeter Street, Strand.]

An octavo volume of 628 pages, with, as conclusion, the graphic presentation of all the diagrams of the chain survey of an actual example. About one-fifth of the book deals with astronomical work, but the remainder sets out very completely all the instruments and methods used in the various kinds of surveying and levelling. The book is illustrated by diagrams in the text and in folding plates, and by illustrations of all the important instruments dealt with in the text.

L'ARCHITECTURE ET LA DECORATION DANS L'ANCIENNE EGYPTE. Par Gustave Jéquier, Professeur d'Egyptologie à l'Université de Neuchâtel. Parts 1 and 2. 50 fr. each part. [Librairie Centrale d'Art et d'Architecture (Ch. Eggimann), 106 Boulevard St. Germain, Paris.]

Each part contains about 75 loose photographic plates, each 20 in. by 14 in., in paper cover. The examples selected are from buildings of the XVIIIth Dynasty, and form a valuable collection, much superior to the casual illustrations to be found in popular books. There is no letterpress.

THE EIGHTEENTH CENTURY IN LONDON: An Account of its Social Life and Arts. By E. Beresford Chancellor, M.A., F.R.Hist.Soc. 4to. Lond. 1920. 35s. net. [B. T. Batsford, Ltd., 94 High Holborn.]

A valuable account of the Social Life, Topography, Buildings and Arts admirably illustrated by reproductions

of contemporary prints, drawings and water colours comprising views of buildings no longer with us or surviving in a mutilated condition.

DIE ARCHITEKTUR DES XX. JAHRHUNDERTS: ZEITSCHRIFT FUR MODERNE BAUKUNST. Ed. by Prof. Dr. Hugo Licht. Fo. Berlin. 1914. £3.

A collection of handsome and well reproduced photographs of public, commercial and domestic buildings erected between 1900 and the outbreak of the war, valuable as a historical document illustrative of the best architectural work of Germany in the heyday of her "Weltmacht." In spite of the prevalence of the "kolossal" feeling, much of it has great merit and repays study. The text is accompanied by plans.

BAUKUNST UND DEKORATIVE PLASTIK DER FRUHRENAISSANCE IN ITALIEN. By Julius Baum. 4to. 1920. 35s. [Julius Hoffmann, Stuttgart.]

A useful collection of well reproduced photos of the architecture and decorative sculpture of the early Renaissance in Italy. Side by side with the famous examples are others less well known. The views are grouped on a system handy for comparison, viz., façades, courtyards, door and window treatment, tombs, ceilings and chimney-pieces, screens and other church fittings, etc. The text is illustrated by some measured drawings.

THE BOOK OF BUNGALOWS. By R. Randal Phillips, Editor of "Our Homes and Gardens." 8vo. Lond. 1920. 8s. 6d. net. [Offices of *Country Life*.]

Gifts to the Library.

The President, at the General Meeting last Monday, announced that since the reading of Mr. Dircks's excellent paper on the Library and Collections of the Institute, some interesting presentations had been made to the Library. The first and most important was from Sir Lawrence Weaver [*Hon. A.*] to whose generosity the Institute owed other rare and valuable books. This latest must have been the gem of Sir Lawrence's own collection, for it was the First Edition, published in 1567, of Philibert de l'Orme's *Le Premier Tome de l'Architecture*, the lack of which made a gap in the Library which Mr. Dircks had commented upon in his paper. The President said that he was sure members would appreciate the generosity of Sir Lawrence's gift when he told them that the British Museum did not possess a copy of this edition.

Another interesting presentation was an autograph letter of Augustus Welby Pugin, dated 4th January, 1841, and addressed to David Charles Read, a painter and etcher who lived at Salisbury. The donor was Mr. Gerald Forsyth.

Mr. Hurst Seager [*F.*], who in the last number of the JOURNAL gave the Institute the benefit of his recent researches into the various repairs, alterations and restorations to which the north front of Westminster Abbey has been subject during the last three or four hundred years, has presented a series of photographs of all the available old prints of the north side of the Abbey.

On the motion of the President, a very cordial vote of thanks was passed to the donors of these presents.

9 CONDUIT STREET, REGENT STREET, W., *8th Jan.* 1921.

CHRONICLE.

Christmas Greetings.

On Christmas Eve the President of the Institute sent the following telegram to the King:

To His Majesty the King, Sandringham,—

Royal Institute of British Architects submit humble duty to His Majesty their Gracious Patron and offer very sincere wishes for happy Christmas.

SIMPSON, *President.*

His Majesty's gracious reply from Sandringham was received the same evening as follows:—

President, Royal Institute of British Architects,—

The King sincerely thanks the Royal Institute of British Architects for their Christmas Greetings which His Majesty heartily reciprocates.

PRIVATE SECRETARY.

Proceedings of the Council, 3rd January, 1921.

Bristol Society of Architects.—The Council approved of proposals laid before them by the Bristol Society of Architects for the re-organisation of the Society and the widening of the scope of its activities.

Scale of Fees for Housing.—The Council agreed to co-operate with the Council of the Surveyors' Institution in negotiating with the Ministry of Health in regard to the agreed Scale of Fees for Housing Work.

Retired Fellowship.—The following Fellows were transferred to the Retired Fellowship Class: C. Lohr (*A.* 1878, *F.* 1906), G. D. Oliver (*A.* 1877, *F.* 1892), Edwin Seward (*A.* 1876, *F.* 1889), John Wynne (*A.* 1875, *F.* 1878).

Reinstatement.—Mr. W. A. Gagnon was reinstated as a Licentiate.

Annual Dinner, 1921.—It was decided to hold the annual dinner of the Royal Institute early in the year, and a Committee consisting of Sir Banister Fletcher, Mr. Wm. Woodward, and Mr. Arthur Keen (Hon. Secretary) was appointed for the purpose of making the necessary arrangements.

Professional Defence.—The Council have decided to re-submit to the General Body the scheme for the foundation of a Professional Defence Union which was laid before a Special General Meeting on the 15th June, 1914.

Compulsory Preparation of Town Planning Schemes.

On the recommendation of the Institute Town Planning Committee the following letter has been addressed by the Council to all the Allied Societies of the Institute in Great Britain :—

23rd December 1920.

DEAR SIR,—The Town Planning and Housing Committee of the Royal Institute have had under consideration the probable effect of the following section of the Housing, Town Planning, etc., Act, 1919 :—

> Sec. 46 (1). The Council of every borough or other urban district containing on the 1st January 1923 a population according to the last census for the time being of more than 20,000 shall, within three years after that date, prepare and submit to the Local Government Board a town planning scheme in respect of all land within the borough or urban district in respect of which a town planning scheme may be made under the Act of 1909.

The Act thus renders it compulsory after 1923 for all local authorities with a population over 20,000 to prepare a town planning scheme for all land in their area likely to be built upon, and the Council of the Institute deem it essential that in the preparation of such plans the various local authorities should have the assistance of a competent architect or architects.

I am therefore desired to suggest that each Allied Society in Great Britain should appoint a special Town Planning Committee, with a view to the appointment of a competent architect in each case and to keep in touch with the R.I.B.A. and the various local authorities in their local area.—Yours faithfully,

IAN MACALISTER, *Secretary.*

London Arterial Roads.

On the recommendation of the Institute Town Planning Committee the following letter has been addressed to Sir Henry Maybury, of the Ministry of Transport, on the subject of the construction of arterial roads in the neighbourhood of London :—

23rd December 1920.

SIR,—I am directed by the Council of the Royal Institute of British Architects to express their gratification at the action already taken by the Ministry of Transport with regard to the construction of arterial roads in the neighbourhood of London as approved by the London Arterial Roads Conferences held under the auspices of the Local Government Board.

I am also directed to express the hope that the additional roads suggested by the London Society on their development plan will be considered in each case.

I am further desired to invite your attention to the suggestions of the Thames Side Housing and Development Committee as approved by a conference of the local authorities concerned and indicated upon the accompanying plan and particulars, and to submit the same for favourable consideration.

The Council desire to impress upon the Ministry the paramount importance of immediately preserving the routes of the proposed arterial roads, both in the neighbourhood of London and elsewhere, and to urge that the authority of Parliament be obtained for this purpose.—I am, Sir, your obedient Servant,

IAN MACALISTER, *Secretary.*

The Civic Survey Conference.

The Joint Conference of the R.I.B.A. and the Garden Cities and Town Planning Association, which had been arranged in connection with the Civic Survey Exhibition, was duly held at the Institute on the 14th ult. The President, Mr. John W. Simpson, first addressed a few words of welcome to the members, and the chair was then taken by the Earl of Plymouth [*Hon. F.*]. There were present representatives of the Ministry of Health, the Housing Commissioners of Regions H, K, L, M, representatives of the London County Council, the Medical Officers of Health of Paddington, Ealing, Kingston-upon-Thames, Westminster, Holborn, Finsbury and Richmond ; the Town Clerks of Woodford, Ham, Finsbury and Epsom ; the Municipal Surveyors or Engineers of Westminster, Harrow, West Ham, Finsbury, and Sutton ; the Chairmen of the Housing Committees of Willesden, Lewisham and Lambeth ; numerous members of the Institute, the Town Planning Institute and the Civic Education League, and representatives of the Regent Street Polytechnic and the Northampton Institute. After a short address by the Earl of Plymouth, Papers were read by Professor Patrick Abercrombie [*F.*], Professor S. D. Adshead [*F.*], Mr. G. L. Pepler and Mr. Raymond Unwin [*F.*], and a long and interesting discussion ensued. Arrangements have been made for a full report of the Conference to be published in the February issue of the *Garden Cities and Town Planning Magazine*, copies of which may be obtained from the office of the Garden Cities Association, 3, Gray's Inn Place, Gray's Inn, W.C., or from P. S. King and Son, Orchard House, Great Smith Street, Westminster—price 1*s.* net. The Civic Survey Exhibition was definitely closed on the 31st ult.

The Housing Subsidy.

It is announced by the Ministry of Health that in consequence of the rejection by the House of Lords of the Ministry of Health (Miscellaneous Provisions) Bill it will not at present be possible to pay the full amount of the subsidy in respect of houses completed during the early months of 1921. In order, however, to keep faith with those who have contracted to build houses on the understanding that the subsidy period would be extended, the Government will introduce legislation at the beginning of next Session of Parliament to provide for payments in full to those completing houses between 23rd December 1920 and the date of the coming into operation of the new Act, and to extend by twelve months the period during which the subsidy can be earned.

The William IV. Statue in the City.

A proposal for removing the statue of William IV. from King William Street to West Ham Park, in order to widen the roadway, was recently before the Court of Common

Council of the City of London. Mr. Arthur Keen, Hon. Secretary of the Institute, pointed out in *The Times* of the 16th December that the idea of removing the statue for the purpose of widening the roadway was absurd; "the difficulties at this point are caused by Billingsgate Market and the cross roads, not by the statue. There is already an ample refuge around its base. A monument that has any bearing on the history of a city should not be removed unless there is urgent need for it." At the meeting of the Court on the 16th ult. a letter of protest was read from the Council of the R.I.B.A., and in the end the proposal to remove the statue was rejected.

Schools of Architecture: New Appointments.

The Council of the University College of South Wales and Monmouthshire have appointed Mr. W. S. Purchon [*A.*] Part-time Lecturer in Architecture, an appointment he will hold jointly with his Headship of the Department of Architecture and Civic Design at the Cardiff Technical College. This has been done as a preliminary step towards the arranging of Joint Courses in Architecture between the University College and the Technical College.

Mr. T. J. Coombs, A.R.C.A., has been appointed Head of the School of Architecture, Aberdeen, in succession to Mr. T. Harold Hughes [*A.*]. Mr. Coombs was Head of the School of Architecture in Leeds for thirteen years, during which time the school has grown considerably, and it is now one of the recognised Schools of Architecture in England. Last session a Department of Town-Planning and Civic Design was instituted in connection with the School.

Mr. Joseph Addison [*A.*] has been appointed Head of the Leeds School in succession to Mr. Coombs.

The Architectural Association of Ireland.

The Architectural Association of Ireland Green Book for the current Session includes the excellent Presidential Address delivered by Mr. George F. Beckett last Session, and a portrait of the new President, Mr. John C. Dewhurst [*A.*], whose career is described, in four pages of verse, from the day "he lay in cradle crowing" till his accession as "President with acclamation, Head of our Association." Prizes open this year to members of the Association are (1) a Prize of Ten Guineas offered by the Royal Institute of the Architects of Ireland for the best design for An Entrance to an Important Bank or Insurance Office, having a frontage of 70 feet in College Green, Dublin; (2) the President's Prize of Three Guineas for the best design for a Dwelling House suitable for a small Farmer; (3) The Vice-President's Prize of Two Guineas for the best design for an inch-scale detail, half plan, half elevation and section of a Shop Front; (4) the Downes' Bronze Medal for the best Measured Drawings of any building or part of a building in Ireland, or elsewhere, or the best collection of details of buildings, erected before 1820; (5) Prizes of Three Guineas, Two Guineas, and One Guinea respectively for the classes in Design at the Metropolitan School of Art, Dublin.

THE EXAMINATIONS.

Increase of Entrance Fees.

The entrance fees for the Institute Examinations are now as follows:—

Preliminary	£4	4	0
Intermediate	5	5	0
Final	6	6	0
Special Final	10	10	0
Special Overseas	10	10	0

COMPETITIONS.

New Council Chamber, Calcutta.

Architects are invited to submit designs in competition for the proposed Council Chamber to be built in Calcutta for the Legislative Council of Bengal. Premiums of £500, £250 and £100 will be awarded to the authors of the designs placed first, second and third respectively by the Assessor, Mr. Henry A. Crouch [*F.*], Consulting Architect to the Government of Bengal. The author of the design placed first will be appointed to carry out the work in accordance with the R.I.B.A. Scale of Professional Charges. Conditions of the Competition are to be obtained from the Secretary, Public Works Department, India Office, Whitehall.

Canadian Battlefields Memorials.

The Dominion Government has decided to hold a competition for the design of the Canadian memorials that are to be erected on the battlefields of France. The Assessors will be Mr. Frank Darling [*F.*], representing the Royal Architectural Institute of Canada; Monsieur Paul P. Cret, nominated by the Société Centrale des Architectes Français to represent the architects of France, and Professor C. H. Reilly [*F.*], of Liverpool, who has been appointed by Mr. John W. Simpson to represent the R.I.B.A. The Assessors will assemble in Canada in the spring to arrange the details of the competition.

New York's Skyscrapers.—Perhaps if I had reached New York from the sea the skyscrapers would have struck me more violently. But I had already seen a few in San Francisco (and wondered at and admired the courage which could build so high after the earthquake of 1906), and more in Chicago, all ugly; so that when I came to New York and found that the latest architects were not only building high, but imposing beauty on these mammoth structures, surprise was mingled with delight. No matter how many more millions of dollars are expended on that strange medley of ancient forms which go to make up New York's new Cathedral, where Romanesque and Gothic seem already to be ready for their divorce, the Woolworth Building will be New York's true fane. Whoever designed that graceful immensity (I have since met the architect in London: Mr. Cass Gilbert) not only gave commerce its most notable monument (to date), but removed for ever the slur upon skyscrapers. The Woolworth Building does not scrape the sky; it greets it, salutes it with a *beau geste*. And I would say something similar of the Bush Building, with its alabaster chapel in the air that becomes translucent at night, and the Madison Square Tower (whose clock face, I noticed, has the amazing diameter of three storeys), and the Burroughs Welcome Building on 41st Street, with its lovely perpendicular lines, and that immense cube of masonry on Park Avenue which bursts into flower, so to speak, at the top in the shape of a very beautiful loggia. But even if these adornments become, as I hope, the rule, one could not resent the ordinary structural elephantiasis a moment after realising New York's physical conditions. A growing city built on a narrow peninsula is unable to expand laterally and must, therefore, soar. The problem was how to make it soar with dignity, and the problem has been solved.—E. V. Lucas in *The Times*.

MINUTES. V.

At the Fifth General Meeting (Business) of the Session 1920-21, held Monday, 3rd January, 1921, at 8 p.m.—Present: Mr. John W. Simpson, President, in the chair; 28 Fellows (including 14 members of the Council) and 14 Associates (including one member of the Council), the Minutes of the Meeting held 13th December, having been published in the JOURNAL, were taken as read and signed as correct.

The following members attending for the first time since their election were formally admitted by the President: Frederick Willey, County Education Architect (Durham), *Fellow*, and Thomas Edward Scott, *Associate*.

The Hon. Secretary announced the decease of the following members: Joseph Smith, elected *Fellow* in 1899, Past President of the Sheffield Society of Architects and representative of that body on the Institute Council; James Webster, *Associate*, 1881; Daniel John Ebbetts, *Associate*, 1878-1910; Frederick Chambers, *Licentiate*.

The President announced the following presentations to the Library, and a vote of thanks was passed by acclamation to the donors: the First Edition (1567) of Philibert de l'Orme's *Le Premier Tome de l'Architecture*, presented by Sir Lawrence Weaver, K.B.E., F.S.A. [*Hon. A.*]; autograph letter from Augustus Welby Pugin to David Charles Read, painter and etcher, presented by Mr. Gerald Forsyth; 14 photographs of Westminster Abbey taken from old and rare engravings, presented by Mr. S. Hurst Seager [*F.*].

The following candidates for membership were elected by show of hands:—

AS FELLOWS (109).

CLARKE: JOHN DANIEL [*A.* 1903], Eastbourne.
CONSTANTINE: HARRY COURTENAY [*A.* 1909].
COUCH: WILLIAM EDWARD [*A.* 1903].
DAWSON: MATTHEW JAMES [*A.* 1907].
FULTON: JAMES BLACK [*A.* 1906], Glasgow.
GAGE: CHARLES HENRY [*A.* 1901].
HIORNS: FREDERICK ROBERT [*A.* 1899].
HOLDEN: CHARLES HENRY [*A.* 1906].
KENNARD: JOHN HAROLD [*A.* 1910].
KEYS: PERCY HUBERT [*A.* 1907], Singapore.
LONG: CHARLES WILLIAM [*A.* 1911].
MANSFIELD: LESLIE [*A.* 1911].
PIERCE: ROBERT, A.R.C.A. [*A.* 1909], Carnarvon.
STEWARDSON: ROBERT ERNEST [*A.* 1904], Shanghai.
TRAQUAIR: RAMSEY [*A.* 1900], Montreal.
WARREN: PERCY FRANCIS [*A.* 1908], Yeovil.
WILLS: JOHN BERTRAM [*A.* 1909], Bristol.

And the following Licentiates who have passed the qualifying examination:—

ADKINS: JOHN STANDEN.
ALEXANDER: SAMUEL GRANT, M.B.E., J.P., Inverness.
ARMOUR: JOHN, Irvine, Scotland.
ARTHUR: JOHN MAURICE, C.M.G., D.S.O., Airdrie.
BARKER: ROGER BRADLEY, Plymouth.
BENTLEY: ARTHUR FRED COLLINS.
BLAIN: WILLIAN JOHN, Glasgow.
BLAKEY: RICHARD PALIN, Alberta, Canada.
BOSWELL: GEORGE ARTHUR, Glasgow.
BROADBENT: FRED, Leeds.
BROWN: WILLIAM, Motherwell.
BRUNTON: FREDERICK SEPTIMUS.
BUNCH: ARTHUR CHARLES, Winchester.
CAVE: AYLWIN OSBORN, Letchworth.
CHURCH: ARTHUR HAROLD, J.P.
CRAIGIE: JAMES HOEY, Glasgow.
CRANE: LIONEL FRANCIS.
DANIEL: THOMAS BEAMMALL.
DAVIDGE-PITTS: HENRY, Mossel Bay, S. Africa.
DAVY: CLIFTON ROBERT.
DOLMAN: WILLIAM LEDSHAM, Windermere.
DUNN: JOHN GLEN, Cambuslang.
DURLACHER: ALEXANDER PERCY, A.M.I.C.E., F.S.I.
DURST: AUSTIN, M.A. Cantab.
DUSSAULT: LEONARD LOUIS, Birmingham.
EKINS: LEONARD GRAY.
ENGLISH: CHARLES WILLIAM.
EWEN: ARTHUR JOHN CLIFFORD.
FERMAUD: EDMUND AUGUSTE.
FLOYD: FRANCIS HAYWARD, Newbury.
FORSTER: JOSEPH, Carlisle.
GALE: ERNEST SEWELL.
GARDNER: HARRY RICHARD.
GARLICK: FRANCIS JOHN.
GASKELL: PETER, J.P., Hull.
GOODRHAM: HENRY ROBERT.
GRAHAM: PATRICK HAMILTON, Wellington, N.Z.
GRUNDY: SAMUEL, JNR., Ulverston.
GURNEY: ARTHUR EDWARD, Warsaw.
HALL: JOSEPH LOCKWOOD, Cape Town.
HARBRON: GEORGE DUDLEY, Hull.
HASLOCK: WILLIAM EDWIN, Middlesbrough-on-Tees.
HENDERSON: HAROLD EDGAR, Nairobi.
HIGNETT: CECIL HORACE, Letchworth.
HOLMAN: GEORGE EDWARD, Lieut.-Col.
HOLTOM: EDWARD GIBBS, Holt, Norfolk.
HOUSTON: JOHN ALFRED TAYLOR, Glasgow.
HUXLEY: WILLIAM SHERRIN, M.C., Kuala Lumpur.
HYAMS: HENRY.
JACKSON: THOMAS GORDON.
JERDAN: JOHN, Edinburgh.
JONES: HUGH GRIFFITH, Montreal.
JONES: RONALD POTTER, M.A. Oxon.
JUPP: SYDNEY.
LONGDEN: REGINALD THELWALL, Stoke-on-Trent.
LUNAN: THOMAS MELVILLE, Glasgow.
MAGGS: LEONARD, Nottingham.
MALCOLM: ALEXANDER NISBET, Falkirk.
MILLAR: THOMAS ANDREW, Glasgow.
MORGAN: CECIL HERBERT, Darjeeling.
NEIL: HAMILTON, Glasgow.
NICHOLLS: WILLIAM HENRY, Madras.
NORMAN: GEOFFREY.
NORTON: CHARLES HARROLD.
PALMER: FREDERICK CHARLES RICHARD.
PATERSON: GEORGE ANDREW, Glasgow.
PEACOCK: THOMAS REID, Quebec.
PEARSON: LIONEL GODFREY.
PETTER: JOHN, Yeovil.
PHIPPS: PAUL, B.A.
PORTER: BERNARD ARTHUR, Birmingham.
PRESTON: ARCHIBALD FREDERICK.
REYNOLDS: EDWIN FRANCIS, Birmingham.
SAUNDERS: JOHN THOMAS.
SHEPPARD: JOHN MORTIMER, P.S.A.I.
SIDWELL: HENRY THOMAS, Rayleigh.
SIMISTER: ERNEST, Oldham.
SINCLAIR: COLIN, M.A., F.S.A. [Scot.], Glasgow.
SNELL: JOHN SAXON.
SPINK: HERBERT, Windsor.
SPOOR: STANLEY MILES.
STEEL: JOHN, Wishaw.
STEWART: JOHN, Glasgow.
STILL: JOHN EDWARD.
SWAN: JAMES HENRY, 8 Clifford's Inn, E.C.
THOMPSON: ALBERT JOHN, Cape Town.
WALKER: WILLIAM, St. Andrews.
WEIR: WILLIAM MAY.
WHITBURN: HENRY ALFRED.
WILLIAMS: RICHARD JOHN, Kettering.
WILSON: THOMAS MILLWOOD.
WINDSOR: FRANK.

AS ASSOCIATES (72).

ADAMS: WALTER ALWYN COLE [*S.* 1912, Special War Exemption].
BARNETT: PERCY WILLIAM [Special War Examination].

BETTS: ALBERT WM. [Special War Exam.], Nottingham.
BLADON: CHAS. ARTHUR [Special War Exam.], Liscard.
BRAMWELL: JAMES STONEMAN [Special War Examination], Liverpool.
BRYETT: AUGUSTUS [Special War Examination].
CATON: WILLIAM COOPER [Special War Examination], Hove, Sussex.
CHERRY: STANLEY VICKERSTAFF [Special War Examination], Nottingham.
CLIFTON: EDWARD NOËL [Special War Examination].
CONNAL: HAROLD JOHN [Special War Exam.], Derby.
CRAIG: WILLIAM HUGHSTON [Special War Examination], Melbourne.
DALE: FREDERIC CHARLES COWDEROI [Special Final Examination].
DAVIDSON: GERALD, B.Arch.Liverpool [*S.* 1919, Special War Exemption], Hoylake.
DEMPSTER: JOHN AUSTIN [Special War Examination].
DOLL: MORDAUNT HENRY CASPERS, M.A. Cantab. [Special War Examination].
ELSWORTH: WILLIAM [Special War Exam.], Liverpool.
EMBERTON: JOSEPH [Special War Examination].
EVANS: ERIC EWART [Special War Examination], Claughton, Cheshire.
FEIRN: JOHN LAURENCE [Special War Examination], Windermere.
FORGIE: ALEXANDER GARDEN [Special War Examination], Leith.
FOWLER: CYRIL WILLIAM [Special War Examination].
FRANCIS: BERNARD THOMAS [Final Examination], Derby.
FRITCHLEY: GEORGE BOWEN [Special War Examination].
GODFREY: FREDERICK WILLIAM [Special War Exam.].
GOLDING: WILLIAM ARTHUR [Special War Exam.], Natal.
GREGORY: WILLIAM JOHN HENRY [Special War Examination], Liverpool.
HALFHIDE: FREDERIC WM. [Special War Examination].
HALL: GEORGE LANGLEY DESMOND [Special War Examination].
HAMLYN: WILLIAM HENRY [Special War Examination].
HARRIS: FRANK CHAMBERS [Special War Examination].
HARRIS: LESLIE YOUNGMAN [*S.* 1911, Special War Exemption], Nottingham.
HILL: GEOFFREY WALKER [*S.* 1912, Special War Exemption], Harrogate.
HOWARD: CHARLES VINCENT [Special War Examination].
JONES: ROBERT DAVID [Special War Examination], Portmadoc.
LANGRISH-TOYE: FREDERICK CHARLES [*S.* 1912, Special War Exemption].
LAWRIE: WILLIAM GRINDLAY [Special War Examination], Sydney.
LAWS: HORACE HERBERT [Special War Examination].
LAWSON: PHILIP HUGH [Special War Examination], Chester.
LEWIS: HORACE MEESHAM [Special War Examination], Wokingham.
LEWIS: WILLIAM JOHN [*S.* 1911, Special War Exemption].
LOVEDAY: WILLIAM TAYLOR [Special War Examination], Rugby.
LOW: SIMPSON [Special War Examination], Dyce, Aberdeenshire.
MCCALLUM: MALCOLM SINCLAIR [*S.* 1913, Special War Exemption], Banffshire.
MACFARLANE: GEORGE GORDON, B.Sc., M.C. [Special War Examination].
MACKINTOSH: WILLIAM [Special War Examination].
MARR: EDMUND TOWNLEY [Special War Examination].
MARTINDALE: CHRISTOPHER JAMES FAWCETT [Special War Examination], Carlisle.
MITCHELL: ANDREW M. M. [*S.* 1912, Special War Exemption].
MOERDIJK: GERARD LEENDERT PIETER [Final Examination], Johannesburg.
NEWRICK: FREDERICK HUBERT [Special War Examination], Sunderland.
NORBURN: GEORGE BERTRAM EDWARD [Special War Examination].
PATON: ARCHIBALD GILCHRIST [*S.* 1920, Special War Exemption], Glasgow.
PEARCE: OSWALD DUNCAN [Special War Examination].
PETERS: THOMAS JAMES [Special War Examination], Newcastle-on-Tyne.
PITE: ROBERT WILLIAM [Special War Examination].
REID: HERBERT HENRY [Special War Examination], Aberdeen.
ROSS: WILLIAM ALEXANDER [Special War Examination].
ROUSE: EDWARD HENRY [Special Final Examination], Hankow.
RUDMAN: WALTER, M.C. [Special War Examination], Chippenham.
SHATTOCK: LAWRENCE HENRY [Final Examination].
SPENCE: WM. NEEDHAM [*S.* 1914, Special War Exemption], Ranelagh, Dublin.
STEPHENS: PHILOMORUS EDWIN [Special War Examination], Penzance.
STEVENS: FREDERICK JOHN [*S.* 1912, Special War Exemption].
SUNTER: MICHAEL CALVERT [Final Examination], Manchester.
SYNNOT: Raymond, M.C. [Special War Examination], Sydney, Australia.
THOMAS: EDWARD JOHN [*S.* 1910, Special War Exemption], Cardiff.
VERGETTE: ROBERT GEORGE [Special War Examination], Swansea.
WATSON: HAROLD [Special War Examination], Otley, Yorks.
WELSH: STEPHEN [Special War Examination], Forfar, Scotland.
WHARF: HENRY FRANCIS [Special War Examination], Hull.
WILSON: PERCY [Special War Examination], Southport, Lancs.
WINDER: RICHARD HENRY, M.A. [*S.* 1920, Special War Exemption], Oldham.

AS HONORARY FELLOW.

CRAWFORD AND BALCARRES, THE RIGHT HON. THE EARL OF, F.S.A.

AS HONORARY ASSOCIATE.

CRESWELL: KEPPEL ARCHIBALD CAMERON, M.R.A.S., Inspector of Ancient Monuments, Palestine.

The proceedings closed and the Meeting terminated at 8.30 p.m.

NOTICES.

APPLICATIONS FOR MEMBERSHIP.

ELECTION, 28TH FEBRUARY, 1921.

The following applications for election have been received. Notice of any objection or other communication respection the candidates must be sent to the Secretary for submission to the Council prior to Monday, 31st January:—

AS FELLOW.

DEWHURST: JOHN CADWALLADER [*A.* 1895], Engineer's Office, Inchicore, Dublin; 37 Eglinton Road, Donnybrook, Dublin.

AS ASSOCIATES (53).

ALLDERIDGE: CHARLES DONALD [Special War Examination], "Hawthornes," Cardigan Road, Bridlington.
BALMER: STANLEY [Special War Examination], 60 Lavender Sweep, Clapham Common, S.W.11.
BERNTON-BENJAMIN: HORACE [Special War Examination], 28 Old Burlington Street, W.1.
*BROWN: JOHN, Lieut.-Col., D.L., D.S.O. [*S.* 1900, Special War Exemption], 80 Abington Street, Northampton.

BULSTRODE: STANLEY GODWIN [Special War Examination], 13 Stour Road, Christchurch, Hants.
BURKE: JOHN EDWARD [Special War Examination], 120 North Circular Road, Dublin.
BURLEIGH: HAROLD [Special War Examination], 7 Priory Road, West Hill, Hastings.
BURNETT: PERCY VIVIAN [Special War Examination], 18 Redcliffe Gardens, S.W.10.
CLARKSON: GEORGE FLINT [Special War Examination], 32 Great Ormond Street, W.C.1.
COLLINS: HENRY RICHARD [Special War Examination], 26 Bateman Street, Cambridge.
COULDREY: WALTER NORMAN [Special War Examination], 19 Palace Avenue, Paignton, Devon.
DANGERFIELD: BERNARD, M.C. [Special War Examination], "Eastcote," 25 Lyndhurst Gardens, Church End, Finchley, N.3.
DANGERFIELD: PAUL [Special War Examination], Westcott, Battlefield Road, St. Albans.
DAVIDSON: SAMUEL [Special War Examination], 8 Great King Street, Edinburgh.
DAVIDSON: WILLIAM ALEXANDER [Special War Examination], 31 Hartington Road, Aberdeen.
DIXON: PERCY SIDNEY [Special War Examination], 128 Algernon Road, Lewisham, S.E.13.
FARNSHAW: HAROLD HICKS [Special War Examination], 23 Massie Street, Cheadle, Cheshire.
FELTHAM: STANLEY CRATHERN [Special War Examination], 126 Broadwater Road, Bruce Grove, Tottenham.
GEARY: FRANK GEORGE [Special War Examination], 29 Lydhurst Avenue, Streatham Hill, S.W.2.
GORDON: ALEXANDER [Special War Examination] 24 Mugiemoss Road, Bucksburn, Aberdeenshire.
GRUMMANT: REGINALD THOMAS [Special War Examination], Melrose, 164 Hornsey Lane, Highgate, N.6.
HOLT: FELIX [Special War Examination] 14 Cook Street, Liverpool.
HORTH: FREDERICK JOHN [Special War Examination], 19 Albany Street, Hull.
HOWARD: STANLEY BOOTHBY [Special War Examination], 23 Catharine Street, Liverpool.
HUGHES: HENRY CASTREE [Special War Examination], 4 Trumpington Street, Cambridge.
JACKSON: BASIL HIPPISLEY [Special War Examination], Eagle House, Wimbledon.
KAYE: STEWART [Special War Examination], 16 Rutland Square, Edinburgh.
KEARNE: LESLIE HAMILTON [Special War Examination], 2 Rothwell Street, Regent's Park, N.W.
KERR: ROBERT SIDNEY [Special War Examination], Grafton House, 2 Golden Square, W.1.
LUMB: JOSEPH HAYDN [Special War Examination], 67 Bootham, York.
MACPHERSON: DONALD [Special War Examination], 15 The Hawthorns, Regent's Park Road, Finchley, N.
MALLARD: FRANCIS ALLAN [Special War Examination], 14 Rothwell Street, Regent's Park, N.W.1.
MANN: STEPHEN [Special War Examination], Blencogo, Wigton, Cumberland.
NIGHTINGALE: FREDERICK BAYLISS [Special War Examination], 47 West Side, Wandsworth Common, S.W.
PICKFORD: ASTON CHARLES [Special War Examination], 108 Fernside Road, Wandsworth Common, S.W.12.
REID: ALEXANDER WILLIAM DOUGLAS, B.A. [Special War Exam.], Brown Cottage, Ovalway, Gerrard's Cross.
RICHARDSON: FRANK [Special War Examination], Gatelands House, Tewitfield, Carnforth, Lancs.
RICKATSON: JOHN [Special War Examination], Endsleigh House, 32 De-la-Pole Avenue, Hull.
ROSS: LESLIE OWEN [Special War Examination], 31 Moreton Place, Belgrave Road, S.W.1.
SANDERS: JOHN EDWARD [Special War Examination], 208 Boaler Street, Liverpool.
*SHORT: ERNEST WILLIAM GEORGE, Lieut.-Col. [*S.* 1896, Special War Exemption], Poplar Lodge, Siddons Road, Forest Hill, S.E.23.
SILVER: EDWIN RUSSELL [Special War Examination], 31 Rookfield Avenue, Muswell Hill, N.10.
SMITH: JOSEPH SUMMERSGILL [Special War Examination], 2 Stumperlowe Avenue, Fulwood, Sheffield.
THOMAS: HUBERT ARTHUR [Special War Examination], 51 North John Street, Liverpool.
WALKER: FREDERICK ARTHUR [Special War Examination], 8 Buckingham Street, Adelphi, W.C.2.
*WEBSTER: FRANCIS POOLE [*S.* 1909, Special War Exemption], 12 Montgomery Road, Sharrow, Sheffield.
WHITBURN: ALGERNON STUART [Special War Examination], "Elm Croft," Woking, Surrey.
WHITBY: CHARLES [Special War Examination], 69A King's Road, Chelsea, S.W.
WHITE-COOPER: RUPERT CHARLES [Special War Examination], 22 Redcliffe Street, Earl's Court, S.W.10.
WILSON: HARRY ERNEST [Special War Examination], 10 Lordship Park, N.16.
WOOD: WILLIAM WALTER [Special War Examination], 154 Forest Hill Road, Forest Hill, S.E.23.
WOODHOUSE: BRIAN WILLIAM [*S.* 1911, Special War Exemption], 35 Brighton Street, Heckmondwike, Yorks.
WORNUM: GEORGE GREY [Special War Examination], 7 Gray's Inn Place, W.C.1.

AS HONORARY CORRESPONDING MEMBER.

LOUVET: ALBERT, President of the Société des Architectes Diplômés par le Gouvernment, 59 Rue de Grenelle, Paris.

AS HONORARY ASSOCIATE.

PLUME: WILLIAM T., Editor of *The Builder*, 4 Catherine Street, Strand, W.C.

* The 3 applicants marked * have been the subject of special consideration by the Council and their names are put forward as special cases in accordance with recommendations Nos. 2, 3, and 4, passed at the Conference with representatives of Allied Societies on the 19th January 1920 and unanimously approved by the Council on the 2nd Feb. 1920.—JOURNAL, 21st February 1920, pp. 178-79.

General Meeting, 17th January, 1921.

THE SIXTH GENERAL MEETING (ORDINARY) of the Session 1920-1921 will be held MONDAY, 17th JANUARY, 1921, at 8 p.m., for the following purposes:—

To read the Minutes of the Meeting held 3rd January, 1921; formally to admit members attending for the first time since their election.

To read the following Paper:—

"THE RESTORATION OF PRAENESTE."

By H. CHALTON BRADSHAW [*A.*], *Rome Scholar.*

To read the Council's DEED OF AWARD OF PRIZES AND STUDENTSHIPS, 1920-21.

WANTED, in a Municipal Office, an Architectural or Civil Engineering Draughtsman experienced in the general design of miscellaneous structures and with knowledge of surveying and levelling. Should be under forty and capable of taking entire charge of office, with small staff of assistants and clerks of works under him. Salary, with bonuses, about £534 per annum. Pension at 65 on the old Treasury scale. Address, Box 8120, Secretary R.I.B.A., 9 Conduit Street, W.

A.R.I.B.A. (40) desiring to move south wishes to obtain partnership in South of England town. Some capital available. Twenty years' experience general practice, especially domestic, school, hospital and asylum work. Design and quantities (London method). Reply, Box 3121, Secretary R.I.B.A., 9 Conduit Street, W.

PROFESSIONAL ASSISTANCE of all kinds rendered. Own office. Address C. Ashworth, Dome Buildings, Richmond, Surrey.

PARTNER WANTED.—F.R.I.B.A. in charge of housing scheme in Oxfordshire seeks salaried partner prepared to live in the country. Address Box 1121, Secretary R.I.B.A., 9, Conduit Street, W.

A.R.I.B.A. (Grissell Gold Medallist), P.A.S.I. (Building Prizeman), and Silver and Bronze Medallist in Construction, prepared to enter into working partnership with other architects. London or Provinces. Address Box 7121, Secretary R.I.B.A., 9, Conduit Street, W.